



DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101









# NAVAL POSTGRADUATE SCHOOL

Monterey, California



## THESIS

AN ANALYSIS OF  
U.S. NAVY LEVERAGED LEASING

by

Ronald E. Ratcliff

December 1984

Thesis Advisor:

J. G. San Miguel

Approved for public release, distribution unlimited

T223023



REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) An Analysis of U.S. Navy Leveraged Leasing		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis December 1984
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Ronald E. Ratcliff		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93943		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93943		12. REPORT DATE December 1984
		13. NUMBER OF PAGES 176
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Lease versus Buy Leveraged Leasing Ship Financing		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  In 1984, the United States Navy began closing the largest leveraged lease agreement ever undertaken. The cost and structural complexity of that transaction, and the use of tax benefit transfers to partially pay for ship charters have made it one of the most controversial defense programs in recent years.		



#20 (ABSTRACT) Continued:

This study examines the controversial issues which have surrounded the Navy's leveraged lease transaction. It also compares that lease with leasing practices in the private sector. In addition, the guidelines and legislation enacted by Congress prescribing procedures to be used by the Department of Defense when considering similar transactions in the future are examined.

Finally, several lessons learned from the Navy's leveraged lease transaction are reviewed to better understand the basic issues which precipitated the initial controversy, and to provide a framework for future Department of Defense long-term leasing agreements.

Approved for public release, distribution unlimited

An Analysis of  
U.S. Navy Leveraged Leasing

by

Ronald E. Ratcliff  
Lieutenant Commander, United States Navy  
B.S., University of Montana, 1971

Submitted in partial fulfillment of the  
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL  
December 1984

---

## ABSTRACT

In 1984, the United States Navy began closing the largest leveraged lease agreement ever undertaken. The cost and structural complexity of that transaction, and the use of tax benefit transfers to partially pay for ship charters have made it one of the most controversial defense programs in recent years.

This study examines the controversial issues which have surrounded the Navy's leveraged lease transaction. It also compares that lease with leasing practices in the private sector. In addition, the guidelines and legislation enacted by Congress prescribing procedures to be used by the Department of Defense when considering similar transactions in the future are examined.

Finally, several lessons learned from the Navy's leveraged lease transaction are reviewed to better understand the basic issues which precipitated the initial controversy, and to provide a framework for future Department of Defense long-term leasing agreements.



# TABLE OF CONTENTS

I.	INTRODUCTION -----	10
A.	GENERAL -----	10
B.	OBJECTIVES -----	11
C.	RESEARCH METHODOLOGY -----	14
D.	ORGANIZATION -----	16
II.	BACKGROUND -----	18
A.	THE LEASING DECISION -----	19
B.	LEASES IN GENERAL -----	21
C.	FINANCIAL ACCOUNTING FOR LEASES -----	23
1.	The Lessee -----	23
2.	The Lessor -----	24
D.	TAX ACCOUNTING FOR LEASES -----	25
E.	LEASING AND TAX INDEMNITIES -----	28
F.	THE LEVERAGED LEASE -----	29
G.	TAX-EXEMPT LEASING -----	32
H.	LEASING OF U.S. FLAG SHIPS -----	34
1.	Participants in a Maritime Leveraged Lease -----	36
2.	Lease Documentation -----	39
I.	SUMMARY -----	40
III.	THE TAKX LEVERAGED LEASE -----	42
A.	GENERAL -----	42
B.	TAKX - AN OVERVIEW -----	42

C.	STRUCTURE OF THE TRANSACTION -----	46
D.	SOLICITATION OF EQUITY PARTICIPATION -----	48
E.	CHARTER HIRE PAYMENTS -----	49
F.	SUMMARY OF PRINCIPAL TERMS -----	51
	1. Basic Capitalized Costs -----	51
	2. Termination -----	51
	3. Adjustments to Capital Hire -----	52
	4. Tax Conditions Precedent -----	53
	5. Other Conditions Precedent -----	54
	6. Special Federal Tax Benefits Indemnity -----	54
G.	TAKX IMPACT ON THE NAVY INDUSTRIAL FUND ---	55
H.	CONGRESSIONAL INVOLVEMENT AND INITIATIVES -	58
I.	SUMMARY -----	61
IV.	LEASE-VERSUS-PURCHASE COST BENEFIT ANALYSES ---	62
A.	LEASE VERSUS PURCHASE ANALYTICAL METHODS --	65
B.	NAVY AND DOD COST ANALYSES -----	67
C.	CONGRESSIONAL COST ANALYSES -----	72
D.	ANALYSIS OF COST -----	74
	1. Treatment of Tax Revenues -----	75
	2. Treatment of Residual Value -----	77
	3. Treatment of Transaction Costs -----	79
	4. Nature of Lease Equity Market -----	80
E.	RECONCILIATION OF COST DIFFERENCES -----	82
F.	OMB/TREASURY GUIDANCE ON LEASE-VERSUS-BUY ANALYSIS -----	83
	1. OMB/TREASURY LEASING POLICY -----	85
	2. OMB/TREASURY LEASE ANALYSIS METHODOLOGY -----	86

G.	SUMMARY -----	88
V.	SHIP FINANCING IN THE PRIVATE SECTOR -----	90
A.	PRIVATE FINANCING -----	91
B.	FEDERAL MARITIME SUPPORT -----	94
	1. Construction Differential Subsidy -----	94
	2. Federal Ship Financing Program (Title XI) -----	95
	3. Capital Construction Fund -----	96
C.	SHIP LEASING (CHARTERING) -----	103
	1. Advantages to Charter -----	104
	2. Disadvantages -----	105
D.	CAPITAL CONSTRUCTION FUND AND LEVERAGED LEASING -----	107
	1. Single-Vessel Agreements -----	108
	2. Capital Construction Fund Benefits Model -----	109
E.	SHIP LEASING UNDER THE ECONOMIC RECOVERY ACT OF 1981 -----	111
F.	SUMMARY -----	113
VI.	ANALYSIS OF TAKX LEASING ISSUES -----	114
A.	GOVERNMENT LEASE-VERSUS-BUY ANALYSIS -----	114
	1. Differing Methods of Analysis -----	115
	2. Lease-Versus-Not Buy -----	119
	3. Advantages and Disadvantages of Long-Term Department of Defense Leases -----	122
	4. Other Considerations -----	125
B.	PRIVATE SECTOR COMPARISON -----	126
	1. 300% Offering for TAKX Equity Participation -----	126
	2. Tax Indemnities -----	128



3.	Guaranteed Rate of Return -----	129
4.	Other Tax Considerations -----	133
5.	Price of TAKX Ships -----	134
6.	Residual Value -----	136
C.	SUMMARY OF ANALYSIS -----	139
VII.	SUMMARY, CONCLUSION, AND RECOMMENDATIONS -----	143
A.	TAKX LESSONS LEARNED -----	144
1.	TAKX Transaction Structure -----	144
2.	Politics of Tax-Exempt Leasing -----	147
3.	Impact on Navy Industrial Fund -----	150
4.	Lease-Versus-Don't Buy -----	151
5.	Understanding the Market -----	153
B.	A FRAMEWORK FOR THE FUTURE -----	155
1.	Effect of the Federal Budget Deficit Reduction Act of 1984 -----	155
2.	OMB/Treasury Lease Analysis Guidelines	156
3.	Congressional Lease Oversight -----	156
4.	Extent of Government Involvement -----	157
C.	RECOMMENDATIONS FOR FURTHER STUDY -----	158
1.	Impact of Ship Charters and Long-Term Leases on Navy Operating and Maintenance Appropriations -----	158
2.	Determination of an Appropriate Federal Government Discount Rate -----	159
3.	Spreading out the Costs of DOD Acquisitions -----	160
APPENDIX A.	EXAMPLE OF THE CAPITAL CONSTRUCTION FUND TAX DEFERRAL MECHANISM -----	161
APPENDIX B.	CAPITAL CONSTRUCTION FUND SINGLE-VESSEL AGREEMENT COMPUTATION -----	167

LIST OF REFERENCES -----	172
INITIAL DISTRIBUTION LIST -----	176

## I. INTRODUCTION

In September 1984, the United States Navy began closing the largest leveraged lease transaction ever conducted in the world. This transaction, when completed, will provide the Navy with the services of thirteen cargo ships and five oil tankers which have a combined cost of approximately \$2.65 billion.

The magnitude of the cost of this transaction, coupled with its highly complex legal and financial terms, have made it one of the most controversial Navy programs in recent years. That controversy has encompassed several diverse areas including: lease versus purchase comparative cost analytical methodologies, the propriety of the procurement of Department of Defense assets through leases, and the use of tax benefit transfers by Federal government agencies to finance the procurement of capital assets.

### A. BACKGROUND

The acquisition of Department of Defense assets through leasing is not a recent innovation. The Navy's Military Sealift Command (MSC) has regularly chartered ships under long-term and short-term agreements since the early 1950's. In 1972, MSC acquired nine tankers under a build and charter program similar to the present lease acquisition program.



Controversy over Defense Department leasing is also not new. The Government Accounting Office issued a report in 1973, entitled, Report to the Congress on the Build and Charter Program for Nine Tanker Ships, which questioned the Navy's assertion that leasing was less expensive than buying the nine tankers MSC acquired in 1972. In 1974, an analysis conducted for the Chief of Naval Operations about the feasibility of using build and charter programs concluded that leasing "tends to increase the costs of obtaining Navy ships" and that buying was the optimal method of acquiring Navy assets. [Ref. 1]

In 1982, however, the Navy presented two separate analyses which concluded leasing was less expensive than buying thirteen cargo ships needed to provide logistic support for the Marines. That program, the Navy's TAKX Maritime Prepositioning Ships procurement program, was subsequently subjected to two separate government analyses. Those studies determined, contrary to earlier Navy studies, that leasing would be much more costly than buying the TAKX ships.

## B. THESIS OBJECTIVES

The acquisition of capital assets through leasing has long been a source of disagreement among financial managers charged with capital budgeting responsibilities. The costs and benefits of leasing are relatively simple to determine from a theoretical standpoint. In actual practice, however,

the quantification of those costs and benefits is a much more difficult process subject to differing assumptions and analytical treatment.

The use of leases by tax-exempt entities has raised a whole new set of considerations in the already complex lease-versus-buy decision process. The Navy's TAKX transaction provides a real world example of the issues and controversy which surround government leasing.

This study will address several of those issues while focusing on two aspects of government leasing. The first aspect of government lease analysis is to determine whether a lease is less costly than a purchase of a needed asset. To date, the majority of the attention and controversy which have surrounded the TAKX transaction have concerned this aspect: i.e., the government cost of leasing versus the government cost of buying. A second, but equally important, aspect of government leasing has been virtually ignored. The government should compare its cost of leasing a particular asset with a similar transaction in the private sector. Such a comparison is important because it provides a benchmark to help the government determine whether it has obtained reasonable lease financing terms.

The purpose of this study is five fold. First, it is designed to provide the reader with a review of the structure and the financial and tax accounting requirements for leases in general. As part of that review, public

sector leasing and the reasons for its popularity among tax exempt entities will be discussed. The Navy's TAKX leveraged lease transaction is presented as a specific example of public sector leasing because it provides enormous insight into the reasons, processes and parties included in such transactions. More specifically, the TAKX transaction presents these components within the context of a Department of Defense procurement program.

Second, the controversial issues and aspects of the TAKX leveraged lease will be reviewed. The specific assumptions and methodologies used by the various cost analyses which compared the TAKX lease with a purchase alternative will be examined. In particular, this study will address the confusion surrounding the existence of a purchase alternative. In point of fact, there was no purchase alternative available to the Navy. All studies to date have ignored this real limitation imposed on the Navy when Congress chose not to appropriate funds to purchase the TAKX ships. The issue was not one of whether the ships should be purchased or leased, but rather was a question of whether the Navy obtained a reasonable and equitable lease agreement.

Third, the financing practices of private shipping companies in the United States are presented as a basis for comparison with the TAKX transaction. Various studies have criticized the TAKX transaction as overly generous to its

investors, but the analysis conducted to date is insufficient to support such claims. The government's lease-versus-buy analysis should consider contemplated transactions in light of similar private sector opportunities. This study looks at that comparison and other related issues.

Fourth, this study will present the reader with a review of recent legislation and Government initiatives which have changed the face of public sector leasing. These changes have greatly restricted the use of leases by defense agencies as vehicles for procurement. The question of whether those changes have gone too far and prohibit leasing when it could be beneficial to Government interests is addressed.

Fifth, assuming that at some future point in time Navy is permitted to proceed with a leasing arrangement similar to the TAKX transaction, a framework is provided to guide that process. The purpose of the framework is to call attention to some of the important lessons learned from the TAKX leveraged lease.

#### C. RESEARCH METHODOLOGY

Research for this study proceeded along two distinct paths. An exhaustive search of current periodical literature was conducted to identify those issues presently considered important or controversial in private and public sector leasing. That search was heuristic, often the result

of recommendations or information received from personal interviews or telephone conversations. This study relies heavily upon available transaction documents to provide the basic terms of the Navy's leveraged lease. The major studies conducted by the Joint Committee on Taxation, the General Accounting Office, the Institute for Defense Analysis and Argent Group, Ltd., also provided an invaluable source of information about the methods, procedures, and guidelines used in Federal lease-versus-purchase analysis.

Interviews, both personal and by telephone, provided the essential details needed to understand the complex legal and financial aspects of the Navy's lease. In that regard, several people were especially helpful in enabling the author to make sense of those details. Mr. William Neustadt, and Mr. Lars Anderson at Military Sealift Command; and Ms. Nancy Mattson and Mr. Marty Gottlieb of Argent Group, Ltd.; and Cdr. Robert Gustavus, the initial contracting officer for the TAKX transaction, supplied much of the documentation and provided invaluable insight into the issues and the problems encountered in arranging such a technically complex transaction. Mr. Derrick Medcalf of American Presidents Lines; and Mr. Richard Rogers of BankAmeriLease Group, provided a private sector view of lease financing and ship leveraged leases. Mr. Melvin Long and Mr. Lawrence Fergeson of the U.S. Maritime Administration; and Mr. Jeff White, an economic analyst in



the Office of the Secretary of Defense were equally invaluable in providing information concerning ship financing and Federal lease analyses.

#### D. ORGANIZATION

This study is presented in the following chapters. Chapter Two provides a general overview of leasing and its many forms. The leasing decision, financial and tax accounting treatment of leases, the leveraged lease, tax-exempt leasing, and merchant ship leases are all discussed to provide a foundation from which to analyze the Navy's TAKX leveraged lease.

Chapter Three presents the TAKX leveraged lease, its principal terms, and financial structure in detail. In addition, the impact of TAKX on the Navy budget and on Federal leasing practices is assessed. Chapter Four reviews the various lease versus buy cost comparison studies conducted by the Navy and other government agencies. The differing methodologies and conflicting conclusions of these studies are presented to provide the reader with a sense of the complexity inherent in the lease-versus-buy cost comparison.

Chapter Five addresses private sector ship financing practices. This section is intended to draw attention to the other aspect of government lease analysis: government cost as opposed to comparable private sector costs.

Chapter Six analyzes the major issues raised in the preceding chapters. The various issues surrounding government lease-versus-purchase analyses are examined. The TAKX transaction is compared to similar private sector charters in an effort to highlight the similarities and differences between Navy and private leasing practices. Recent legislation and other government initiatives have restricted Federal agency leasing to the point where transactions such as TAKX will no longer be possible.

Chapter Seven reviews the lessons learned from the Navy's TAKX transaction and provides a framework from which future DOD leases can be structured. It also recommends areas which appear profitable for further study as a result of having examined the Navy's latest experience with leveraged leasing.

The opinions expressed in this study are those of the author, and do not reflect official opinion or represent the position of the Navy or the Department of Defense.

## II. BACKGROUND

Leasing has offered the private sector an attractive source of capital for financing acquisition of assets for a number of years. Not until the passage of the Economic Recovery Tax Act (ERTA) of 1981, however, did leasing offer the public sector an equally attractive financing alternative. Prior to ERTA, tax-exempt entities used their superior credit or tax-exempt status to raise funds through conventional means at a lower cost than was available through leasing. The greatly liberalized leasing rules under ERTA, however, enabled tax-exempt entities to use previously unavailable ownership tax benefits to partially subsidize their acquisitions. The Navy's use of ERTA's relaxed leasing rules in the TAKX transaction, unfortunately, focused the public's attention on the propriety of using those subsidies.

This chapter will review the general nature of leasing and review the rules and regulations which govern the financial and tax accounting for leases. It will examine specific leasing practices such as leveraged leasing and the use of tax benefit transfers by tax-exempt entities to subsidize part of the costs of their leases. Finally, this chapter will look indepth at the various contractual parties, documents, and the structure of a ship leveraged

lease to provide a foundation for better understanding the issues raised in subsequent chapters.

#### A. THE LEASING DECISION

The decision to lease or buy an asset is a secondary consideration in the capital budgeting process. Contemporary financial opinion adheres to the principal that the attractiveness of any capital investment opportunity should be appraised without reference to the type of financing which will be used to gain the use of that asset. In that regard, the question of whether an entity should lease or buy an asset is secondary to the question of whether the entity should acquire the asset in the first place. Once the decision has been made to invest in a capital asset, then the entity is ready to address the question of how to finance the acquisition of that asset. [Ref. 2]

When faced with the question of how to acquire an asset, the decision-maker can make one of two basic choices: buy the asset or lease it. To make that decision, several factors must be considered, the most important of which include: [Refs. 3 and 4]

One, the ability of the entity to raise funds to buy the asset. Entities in the private sector must consider the availability of equity and debt capacity. Public sector entities must assess their ability to obtain procurement appropriations from the authorizing body.

Two, the total relative costs of buying versus leasing must be compared. Since there are different cash flows associated with each alternative, some meaningful method of comparison must be used.

Three, the impact of the method of acquiring the asset on the entity's financial statements must be assessed. Purchase of the asset requires disclosure of any liability incurred in its purchase. Leasing, on the other hand, can be "off-balance sheet" financing and no such liability is disclosed.

Four, the risks and costs inherent in the buy and lease alternatives. Obsolescence, for instance, may be a major concern which makes the lease alternative more attractive than a purchase.

Five, the availability of tax benefits is usually a major advantage to buying. The ability to use the tax benefits inherent in ownership, however, is a major consideration which may favor the lease alternative.

Six, the selection of an appropriate cost comparison methodology that takes into account all of the pertinent elements, in addition to those listed above, involved in the lease versus buy decision is a critical task.

The process of selecting the financing alternative to acquire an asset encompasses several criteria which require managerial judgement as well as quantitative analysis. The lease and buy alternatives are, in themselves, a system of



complex decisions. The decision to buy is often a decision to "borrow" since few companies are able, or find it to their advantage, to fund capital investments purely from equity sources. The lease alternative is even more complex to decipher because there are so many facets to be considered when structuring a lease. The multiple aspects of leasing are reviewed in the next section. In summary, the decision to lease or buy is not an investment decision, rather it is a financing decision.

## B. LEASES IN GENERAL

A lease is an agreement between two parties: a lessor who owns an asset and a lessee who uses the asset. The lease agreement conveys to the lessee the right to use an asset owned by the lessor for a specific period of time in return for a stipulated series of cash payments. This series of cash payments is set to enable the lessor to recover the cost incurred to procure the asset, arrange the lease, and provide a satisfactory rate of return on the investment in the asset over the life of the lease. Title to the leased asset is retained by the lessor. At the end of the lease term, the lessee usually has three options: (1) renew the lease, (2) buy the asset, or (3) terminate the lease and return the asset to the lessor. The terms under which the lessee can exercise any of the three options determine the classification of the lease for tax purposes as well as for financial accounting purposes.

Leases are classified from two different perspectives. From an accounting standpoint, leases are classified as either capital leases or operating leases. The accounting distinction between a capital and operating lease is specified even further dependent upon whether it is the lessor or the lessee who is accounting for the lease.

From an Internal Revenue Service standpoint, leases are classified as either true leases or conditional sale (pseudo) leases. The principal financial benefit of lower acquisition cost, commonly attributed to leasing, is dependent upon the lease being classified by the IRS as a true lease. Classification as a true lease permits the indirect realization of tax benefits which might otherwise be lost. The true lease enables the lessor to claim the tax benefits of ownership and pass through to the lessee some of those benefits in the form a reduced rentals.

Classification as conditional sale lease, however, recognizes the lessee as the owner for tax purposes. The lessor is unable to recognize any tax benefits and cannot charge a lease rate which is competitive with a purchase financed using conventional borrowing. Classification as a conditional sale lease is generally unacceptable for both the lessor and lessee. The criteria for the classification of leases from both an accounting standpoint and an income tax standpoint are presented below. [Ref. 5]

## C. FINANCIAL ACCOUNTING FOR LEASES

### 1. The Lessee

From the lessee's standpoint, a lease is classified as either a capital (financing) lease or as an operating lease. The capital lease provides the lessee with most of the benefits and responsibilities of ownership except for legal title and any benefits from the asset's residual value at the end of the lease term. Significantly, the capital lease requires the lessee to carry the asset on its balance sheet both as an asset and as a liability at the present value of the unpaid lease payments. Classification of the lease as an operating lease, on the other hand, provides for the temporary use of the asset without the lessee assuming any ownership rights or risks. As a result, no balance sheet entries are required to record acquisition of the asset. For that reason, operating leases are referred to as "off balance sheet financing." [Ref. 6]

For the lessee, the lease must be classified as a capital lease if it meets one or more of the following criteria: [Ref. 7]

- a. Lease transfers ownership of the asset to the lessee.
- b. Lease contains a bargain purchase option.
- c. Lease term is equal to or greater than 75% of the estimated economic life of the leased asset.
- d. Present Value of the minimum lease payments equals or exceeds 90% of the fair value of the leased asset.

## 2. The Lessor

For the lessor, leases are classified in one of three ways:

- a. Operating lease,
- b. Direct financing lease, or
- c. Sales type lease.

The lease must be classified as a direct financing lease or as a sales type lease if the lease meets any one of the four criteria needed to be classified as a capital lease for the lessee, and meets both of the following criteria:

- a. Collectibility of the lease payments from the lessee is reasonably predictable.
- b. No important uncertainties exist over the unreimbursable costs yet to be incurred by the lessor under the lease.

The difference in classification between the direct financing and the sales-type lease exists in the presence or absence of a manufacturer's or dealer's profit. A sales-type lease involves a profit or loss while a direct financing lease does not. Determination between the two is made at the inception of the lease when the fair market value of the asset is compared with the lessor's cost. If fair market value and cost are different, the lease is classified as a sales-type lease. If fair market value and lessor's cost are the same, the lease is classified as a direct financing lease. If the lease is unable to meet direct financing or sales criteria, it must be classified as an operating lease. [Ref. 6]

Classification as a direct financing lease permits the lessor to recognize income from the lease by amortizing unearned income over the lease term so as to produce a constant periodic return on the net lease investment. Classification as a sales type lease would lead to the lease being classified as a "pseudo" or conditional sale lease which would prohibit the lessor from taking advantage of the tax benefits inherent in ownership.

If the lease agreement fails to meet the criteria for classification as either a direct financing lease or as a sales type lease, it must be classified as an operating lease which requires the lessor to report income over the lease term as lease payments become receivable. The deferral of income which results from classification as an operating lease usually makes such classification unacceptable to the lessor. For the lessor, structuring the lease to insure its classification as a direct financing lease is critical since it permits the lease to be further classified as a "true lease" for tax purposes, thereby qualifying for various tax benefits. [Ref. 5]

#### D. TAX ACCOUNTING FOR LEASES

Apart from the financial accounting requirements for lease classification, the IRS has established its own standards of classification to address the income tax ramifications of leasing agreements. In the eyes of the Internal Revenue Service, leases are classified as either a



"True lease" or as a "Conditional Sale lease." The true lease recognizes the lessor as the owner of the leased asset, which entitles the lessor to the tax benefits associated with ownership. These tax benefits are important to both the lessor and lessee because they effectively lower the lessor's cost of acquisition which permits the lessor to charge lower lease rates. The lessee recognizes the lease payments on the income statement as an expense, but does not have to recognize future lease payments as a liability on the balance sheet.

The conditional sale lease, however, considers the lease agreement to be a disguised sale and recognizes the lessee as owner of the asset. The lessor must treat the transaction as a loan. Since the lessor is not entitled to any of the tax benefits of ownership, the lessor must charge higher lease rates to recover his costs. The lessee must carry the asset on the balance sheet as both an asset and a liability, which may be unacceptable from the lessee's standpoint.

The criteria, which govern classification as a true lease or as a conditional sale lease are set forth in various IRS Revenue Rulings and Procedures. In making that determination, the IRS stated that it would examine the leasing agreement in terms of its intent and in light of the facts and circumstances existing at the time of the agreement. The IRS explained that no single test or

combination of tests would be used in making its rulings, but rather each case would be "decided in the light of its particular facts." [Ref. 8]

While the tax laws which surround leases are lengthy and complex, a lease generally qualifies as a true lease for tax purposes if all the following criteria are met.

One, the estimated fair market residual value of the leased property at the end of the lease term must equal or exceed 20 percent of the original cost of the leased property.

Two, the estimated remaining useful life of the leased property at the end of the initial lease term will equal or exceed 20 percent of the original estimated useful life of the leased property and be at least one year.

Three, the lessee must not be entitled to purchase or re-lease the property at the end of the lease term at a bargain (below fair market value) price, nor may the lessor be permitted to abandon the property at the end of the lease term.

Four, at the beginning of the lease and at all times during the lease term, the lessor must have a minimum unconditional "at risk" investment equal to at least 20 percent of the cost of the leased property.

Five, the lessee or any related party may not provide any part of the cost of the property, nor can they lend to the lessor any of the funds necessary to acquire the

property or guarantee any indebtedness incurred in connection with the acquisition of the property.

Six, the lessor must demonstrate that it expects to receive a profit from the leasing transaction which is apart from any tax benefits resulting from the lease. [Ref. 9]

#### E. LEASING AND TAX IDEMNITITES.

As discussed above, the use of leasing as a means of financing is normally predicated upon the availability of tax benefits for the lessor. The lease rate is set at a level which, in conjunction with the tax benefits realized, enable the lessor to recover the cost of acquisition and provide an acceptable rate of return on the investment. The lessor regards its risk as a lending risk and not a speculative risk associated with the availability of tax benefits. The lease agreement is normally written to protect the lessor against the loss of expected tax benefits. If the tax benefits are determined to be unavailable to the lessor, the lease rate is adjusted upward to offset any loss which the lessor would incur as a result of that determination. Such tax indemnification is defended under the premise that since the lessor passes a substantial part of the tax benefits on to the lessee in the form of reduced lease rates which represents a substantial reduction in the cost of long term debt financing the lessee should accept its share of the risk. [Ref. 10]

## F. THE LEVERAGED LEASE.

Direct financing (true) leases fall into two basic categories: direct leases and leveraged leases. In a direct lease, the lessor provides all the funds necessary to acquire the asset which will be leased. If the lessor borrows to acquire the necessary funds, he does so on a full recourse basis. In other words, the lessor is at risk for all the funds necessary to acquire the asset.

The leveraged lease has evolved over time from the basic financial lease as the financing profession has sought to take advantage of the tax benefits of ownership without incurring the total costs usually associated with such ownership. Basically, the leveraged lease is a three-party financial leasing agreement in which the lessor borrows, from a third party lender on a non-recourse basis, a substantial proportion (usually 50% to 80%) of the purchase price of the asset to be leased. The loan is secured by a first lien on the asset, an assignment of the lease, and an assignment of the lease rental payments. The interest rate charged on the non-recourse loan is a function of the lessee's credit rating. [Ref. 10]

The lessor then leases the asset to the lessee for a stipulated series of lease payments. The combination of the cash flows from the lease payments and the savings realized from the tax benefits associated with owning the asset

provide the lessor with the necessary rate of return on his investment. [Ref. 11]

The leveraged lease is a highly complex financial instrument in two respects: First, it is legally complex in that it depends on tax laws, specific tax rulings and complicated trust and security agreements. Second, the leveraged lease is computationally complex in that the dollar amounts of the lease payments are dependent upon several factors. [Ref. 12]

The most important tax issue inherent in the leveraged lease is the whether the IRS will rule that the lease qualifies as a true lease and is eligible to provide the lessor with the anticipated tax benefits. If the IRS rules that the leveraged lease does not qualify as a true lease, but is instead a "conditional sales" agreement, then the lessor will lose the tax benefits to the lessee. In such cases, the lease agreement will usually require the lessee to pay a higher periodic lease payment to compensate the lessor for the loss of the anticipated tax benefits in order to maintain the lessor's required rate of return.

In 1981, the Economic Recovery Tax Act (ERTA) significantly relaxed the conditions under which a lease agreement would be considered a "true" lease by the IRS. Prior to ERTA, the major consideration in determining whether a lease qualified as a true lease was whether it had



nontax economic substance. Toward that end, two specific requirements were imposed: [Ref. 13]

- a. The lessor was required to make and maintain a minimum unconditional equity investment of at least 20% of the cost of the asset.
- b. There must exist a reasonable expectation of profit from the transaction, independent of the tax benefits.

The passage of ERTA in 1981 essentially repealed the requirements that leases have nontax economic substance in an attempt to increase the profitability of struggling businesses by offering them incentives to purchase new equipment and machinery. These provisions permitted these companies to sell their tax benefits resulting from new purchases by entering into sale-leaseback transactions with profitable companies. For lessor companies, these relaxed rules offered attractive rates of return through the purchase of the tax benefits of unprofitable companies. While the ERTA provisions proved to be extremely popular with the business community, the cost was seen to be prohibitive by the Treasury and the ERTA provisions were changed in 1982 by the Tax Equity and Fiscal Responsibility Act (TEFRA). TEFRA restricted the benefits ensuing from various leasing transactions. Significantly, TEFRA reinstituted the pre-ERTA nontax economic substance requirements for leveraged leases. [Ref. 13]



## G. TAX EXEMPT LEASING

Any acquisition of an asset can be viewed as a combination of interrelated costs, benefits and risks which are allocated among the owners, users and financiers associated with the transaction. Among these costs and benefits are state and Federal income taxes associated with the financing arrangements of the transaction. Government agencies (Federal, state and local) are, by and large, exempt from paying taxes and are likewise not able to take advantage of various tax benefits accruing from ownership, such as depreciation deductions and deductions for interest paid on debt instruments. Leasing transactions, however, can be structured so that the tax exempt entity can enjoy the tax benefits it is normally prohibited from using. One such method is to structure the transaction in such a way as to provide the lessor with the tax benefits accruing from ownership (investment tax credits, interest and depreciation deductions). The lessor, in turn, passes some of those benefits back to the tax-exempt entity in the form of lower payments than it would normally incur if it were to acquire the asset through some other conventional debt financing arrangement. [Ref. 14]

Tax-exempt leasing has come under a great deal of scrutiny from Congress. The largest reason for congressional concern is the negative impact leasing by nontaxable entities has on tax revenues. When a nontaxable

entity structures a lease in a way which generates tax benefits which lower the lessor's tax liability, the Federal Treasury, in effect, subsidizes the acquisition of that asset. So, although a nontaxable entity (such as a Federal agency) may pay a lower price for its acquisition, the total cost to the government may actually be more than if the entity had purchased the asset instead of leasing it.

In 1983, Congress directed the General Accounting Office to investigate the tax and budget implications of the Navy's TAKX lease which made use of tax benefit transfers. Among the questions raised in that request, Congress asked GAO to report why Federal agencies were attracted to leasing as an alternative to procurement through the normal appropriation process. GAO reported back that Federal agencies found leasing attractive for three reasons. One, it allowed them to spread the cost of the asset over a longer period of time. Normal procurement procedures require a Federal agency to incur the entire cost of the asset when it is purchased. Two, since lease payments are made from operation and maintenance funds and not from procurement funds, lease proposals are not subjected to the same level of scrutiny normally associated with the procurement process. Three, as was alluded to above, leasing can make acquisition appear less costly because part of the cost is shifted from the agency's budget to the Treasury in the form of reduced tax revenues. [Ref. 15]

## H. LEASING OF U.S. FLAG SHIPS

Over the past decade, leasing has become a major financing method used by shipping companies to acquire the use of shipping assets. While chartering of ships has existed for centuries, the growth of leasing is a recent outgrowth of the growing awareness of the financial power inherent in leasing.

The tax-oriented ship lease is similar to leases found in other segments of the economy. It is designed to take advantage of the various tax benefits available through leasing. The principal reason shipping companies chose to lease some or all their ships is the low lease rental cost available through tax-oriented leases. Leasing companies can offer low cost leases to users because of the cash flows created by the tax benefits of the transaction and pass those benefits through to the lessee in the form of lower lease rates.

In 1980, the Maritime Administration estimated that the equivalent interest cost of a tax-oriented 20 to 25 year leveraged lease of a ship was 2.5 to 3.5 percent under the long-term debt interest rate available to the lessee if he attempted to buy the same ship through debt financing.

[Ref. 16]

In a typical ship leasing transaction, the ship user will have a ship built to its specifications at a shipyard of its own choice. The user will negotiate the terms of the

construction contract including warranties, guarantees, delivery date and price. Once contractual agreements for those terms are reached, the user finds an investment source willing to buy the ship and lease it back to the user. The investor buys the ship, becoming the "lessor" and enters into a bareboat charter with the user, the "lessee", who is also known as the charterer.

The charter agreement specifies the length of the bareboat charter (lease term), charter hire payments (lease rental payments) and any other terms deemed necessary between the lessor and the lessee. The charter goes into effect when the ship is delivered and accepted for use by the charterer. The charter hire payments are net to the lessor, with the charterer paying for all costs of operation, service, maintenance, insurance and property taxes. A primary condition for tax purposes is that the lessor assumes the significant risks of ownership of the ship. In return for those risks and his initial investment, the lessor is entitled to the tax benefits of ownership and charter hire payments which serve to provide an agreed upon rate of return. [Ref. 16]

In a ship leveraged lease, the lessor acquires ownership through partial equity investment. The lessor finances a good share of the remaining purchase cost (anywhere from 20 to 80%) by borrowing from other parties on a non-recourse basis to the lessor. The leveraged lease is structured to

enable the lessor to claim all the tax benefits associated with full ownership even though the lessor only provides a portion of the capital needed to acquire the asset. The lease is leveraged because the non-recourse debt increases the size of the tax shelter relative to the lessor's equity investment. Figure 1 provides a detailed graphic representation of a typical ship leveraged lease.

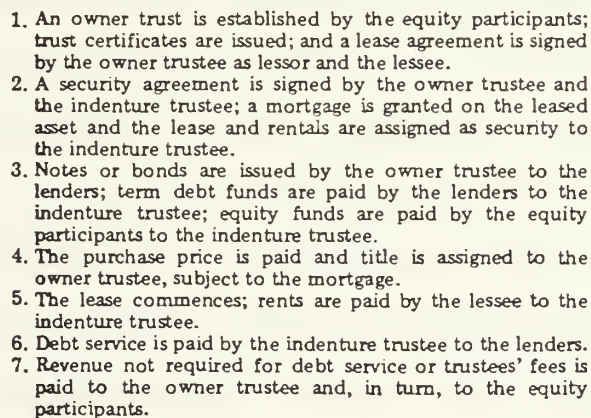
The lenders in a ship lease are usually large banks and other institutional lenders. The loans which they make to ship lessors are normally non-recourse loans. Such loans specifically provide that the lessor is under no obligation to pay off the loan in the event that the charterer (lessee) defaults. The lenders look directly to the charter hire made by the charterer to service the debt. For that reason, the charterer's credit rating directly affects the interest rate charged by the lenders on the non-recourse loan made to the lessor. [Ref. 17: pp. 1257-1259]

#### 1. Participants in a Maritime Leveraged Lease

As discussed in previous sections, the leveraged ship lease is typically a complex transaction which in principle only involves three parties. In actual practice, however, it normally involves involves no less than seven parties. Their functions and characteristics are as follows:

The Lessee is the party which operates the ship and makes the periodic charter hire payments.





37

The Lessor/Owner Trustee holds title to the leased asset for the benefit of the equity participants, subject to mortgage to the indenture trustee (see below). The lessor/owner trustee issues bonds to the lenders, receives cash distributions from the indenture trustee, and distributes earnings to the equity participants.

The Equity Participants are those parties which invest their own funds in partial payment of the purchase price of the asset. They finance the remainder of the purchase through some form of debt offering, typically a bond issue. In return they receive rents after payment of debt service, taxes and trustee fees, and claim the tax benefits incidental to ownership of the asset. The tax benefits normally include an Investment Tax Credit (ITC) and depreciation deductions.

The Debt Participants (Lenders) are typically large financial lending institutions which provide up to 80% of the purchase price on a non-recourse loan basis to the lessor or owner trustee. Their investment is normally secured by a mortgage on the asset being leased.

The Indenture Trustee is an intermediary which receives funds from the equity and debt participants and purchases the asset subject to a mortgage held by the debt participants. He also receives rent payments from the lessee, services the debt and distributes the remaining revenues to the owner trustee.

The Shipyard builds the vessel, receives the purchase price, and delivers the vessel.

The Packager is a financial and leasing expert which arranges the lease transaction including drawing up the necessary legal documents and finds the debt and equity participants. [Ref. 16]

## 2. Lease Documentation

The agreements and legal documents necessary to protect the interests of all the parties involved in a ship leveraged lease are as complex as they are numerous. While they must be strong enough to ensure each obligation is enforceable, they must also be flexible to deal with foreseeable economic, legal and operational events which may arise over the life of the charter agreement. The principal documents include: [Ref. 17: pp. 1261-1265]

The Participation Agreement. This is the basic document of the ship leveraged lease. It provides the guidelines for structuring the transaction. It sets forth the obligations, representations, warranties, indemnities, and payments required of each of the parties. It specifies procedures and timetables for ship deliveries, various equity and charter payments. The Participation Agreement also specifies the various general and tax-related indemnities agreed upon by the participants.

The Owner Trust and Trust Indenture Agreements. These two agreements specify the obligations between the

equity participants and the owner trustee which acts in their behalf and between the owner trustee and the indenture trustee. The Trust Indenture explicitly describes the disbursement of the charter hire payment between the various parties to the lease transaction and their relative priority in receiving payment or indemnification.

The Bareboat Charter. In order to meet the IRS requirements for a true lease, the charter between the lessor and lessee is a bareboat charter. The bareboat charter requires the lessee (charterer) to pay all operating and maintenance costs and that all charter hire payments are made on a "hell or high water" basis. The hell or high water provision stipulates that the charter hire be made regardless of whether the charterer used or operated the ship during the charter period.

Other Agreements. Depending upon the complexity of the transaction and the number of the parties involved, some or all the the following agreements may be a part of the transaction. The indenture trustee may receive a first preferred ship mortgage on the chartered ship and also be entitled to a secured interest in the charter hire. Various construction guarantees and security interests are typical when the vessel to be chartered must be built first.

## I. SUMMARY

This chapter has addressed the general nature of leasing. The decision to lease or buy is secondary to the

investment decision in the capital budgeting process. Leases are classified from two standpoints: a financial accounting perspective and a tax accounting perspective. The structure and provisions of the lease agreement must meet certain criteria from both perspectives to qualify for the various advantages normally associated with leasing. The leveraged lease is a particular kind of lease which uses tax benefits to provide part of the lessor's return on investment.

Over the past decade, leasing has become a major financing method used by ocean shipping companies to acquire shipping assets. The leveraged lease, in particular, has become a popular leasing method due to its often lower implicit financing costs. The maritime leveraged lease, however, is a complex transaction involving several parties and legal documents.

With the passage of the Economic Recovery Tax Act of 1981 and its relaxed leasing regulations, tax-exempt entities turned to leasing as a means of financing the acquisition of their capital assets. The Navy attempted to make use of those liberalized rules in structuring the TAKX leveraged lease transaction. That transaction is reviewed in the next chapter.



### III. THE TAXK LEVERAGED LEASE

#### A. GENERAL

The TAKX leveraged lease transaction is undoubtedly one of the most controversial Navy procurement programs of recent years. Not only has it raised questions about the adequacy of existing guidelines in properly evaluating lease versus buy alternatives, but it has raised more basic questions such as the propriety of the use of tax benefit transfers by tax exempt entities and the lack of Congressional oversight in the Department of Defense leasing process.

This chapter will trace the origins of the TAKX program and follow its development to its present stage. The assumptions, methodologies and conclusions of the major studies, which have analyzed the TAKX transaction, are presented in the following chapter in an effort to gain insight as to why differences exist between them.

#### B. TAKX - AN OVERVIEW

The TAKX Maritime Prepositioning Ships program was authorized to provide the sealift capability for the rapid deployment of three U. S. Marine amphibious brigades. The program was to encompass the construction of thirteen special purpose roll-on/roll-off container ships capable of loading and unloading in areas without port facilities.

Acquisition of the TAKX vessels was originally envisioned to be accomplished through purchase. While the need for the TAKX vessels was apparent, there was insufficient congressional support for the program to obtain appropriations for their procurement. Based on the perceived unavailability of procurement appropriations, the decision was made to explore acquisition of the TAKX ships through a Build and Charter program.

Leasing of auxiliary ships through Build and Charter programs was not a new innovation designed solely to procure the TAKX vessels. Build and Charter programs have been used by the Navy since the early 1950's to meet many of its sealift requirements. The Military Sealift Command charters commercial ships on a regular basis and in 1983 had some seventy ships under some form of charter agreement.

[Ref. 15: p. 2]

In October 1981, the Dept of the Navy requested proposals for the services, on a time charter basis, of the thirteen TAKX ships. The award recipients were required to arrange for the construction, financing and operation of those vessels. All the vessels were to be privately owned and manned by civilian crews and in all respects be U.S. Merchant Marine commercial ships. In September 1982, the Navy received approval from four Congressional oversight committees to proceed with the Build and Charter program for the TAKX vessels.

In 1982 and 1983 the Navy executed binding agreements for the time charter of thirteen TAKX ships and five T-5 tankers. This involved a \$2.65 billion combined construction cost for the eighteen ships. In each case the awards required the recipients to arrange for the construction, financing and operation of the ships. Awards were made to four companies for the eighteen ships:

General Dynamics Corporation	5 TAKX ships
Maersk Line, Limited	5 TAKX ships
Waterman Steamship Corporation	3 TAKX ships
Ocean Shipholdings, Inc.	5 T-5 tankers

Each vessel is the subject of a separate leveraged lease agreement. Upon acceptance by the Navy of each vessel for service, that vessel is concurrently acquired by a group of equity participants using both equity investment and the issue of bonds to finance the remaining cost of acquisition. The debt is secured through the mortgage of the vessel and assignment of future lease payments and, as a result, is non-recourse to the equity-participants. The vessel is then chartered under a Bareboat Charter to a Contractor which delivers the vessel for service under a Time Charter to the Navy.

One of the important issues which surrounded the TAKX transaction was to assure the availability of the Investment Tax Credit (ITC) and the Accelerated Cost Recovery System (ACRS) depreciation deduction to the equity participants. Each tax benefit was subject to different set of IRS considerations.

The ACRS depreciation deduction depended upon two elements. First, the TAKX transaction had to qualify as a true lease under Revenue Procedure 75-21. Second, the amount of the ACRS depreciation deduction depended upon the degree of government participation in the lease. Current law provides that if an asset is leased directly to a Federal Agency, the depreciable basis of the leased asset is limited to 80 percent of its capitalized cost. However, if the lease is between private sector entities, the depreciable basis is increased to 100 percent of the asset's capitalized cost.

The ITC also depended directly on the character of the TAKX lease. Under current tax law, if a lease is made directly to a Federal agency, the lessor is prohibited from taking the Investment Tax Credit. Thus, if the Navy chose to lease the TAKX vessels directly from the equity participants under a bareboat charter, the ITC was lost.

The availability of the ITC and the ACRS deduction based on 100 percent of the vessels' capitalized costs have a significant impact on the size of the charter hire payments to be paid by the Navy. In its report to the Navy, the Institute for Defense Analysis determined that without the ITC alone, annual lease payments would increase by \$4 million on a ship costing \$200 million. Such an increase represents the amount necessary to compensate the lessor for the loss of the ITC and to assure the lessor

receives the rate of return guaranteed by the basic leasing agreement. [Ref. 18: p. 4-19]

The TAKX transaction was structured to ensure the full availability of both tax benefits. Instead of leasing the ships directly from the equity participants, the Navy structured the deal to include a "Contractor". The Contractor leased the TAKX ships from the equity participants under a bareboat charter. The Contractor, in turn, entered into a time charter with the Navy to provide ship services. For those services, the Navy agreed to a charter hire payment sufficient to pay the Contractor's operating costs and his bareboat charter costs. This structure permitted the equity participants to claim the full range of tax benefits since the true lease existed between them and the contractor, not a government agency. See figure 2 for a graphic representation of the TAKX transaction structure.

#### C. STRUCTURE OF THE TRANSACTION

The financing of each vessel is structured as follows: [Ref. 19: pp. 1-9]

One, an Equity Participation Agreement is executed which commits the equity participants to purchase through an OWNER TRUSTEE one or more vessels from a shipyard selected to build the TAKX or T-5 vessels concurrently upon acceptance of delivery of that vessel by the Navy.



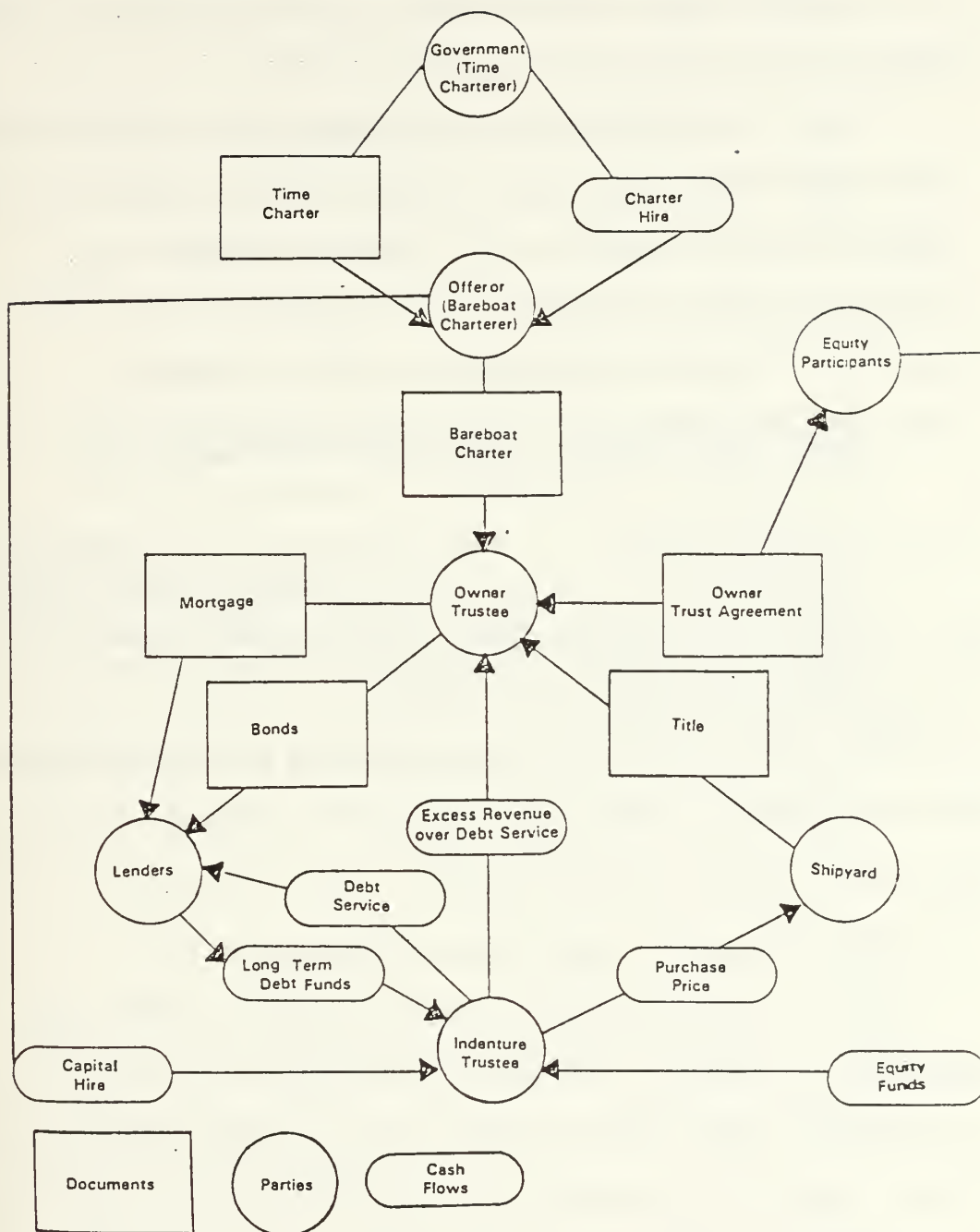


Figure 2.  
TAKX Leveraged Lease Structure  
[Ref. 28: p. A-2]

Two, the OWNER TRUSTEE, as trustee for the equity participants, enters into a BAREBOAT CHARTER of the vessel with a CONTRACTOR for a period of 25 years for the TAKX vessels and 20 years for the T-5 tankers.

Three, the CONTRACTOR has entered into a TIME CHARTER of each vessel with the Navy. The Contractor assigns all its rights to receive Capital Hire and any payment of Termination Value under the Time Charter to the Owner Trustee. The Navy also agreed to the following:

- a. The assignment of the Capital Hire any payment of Termination Value under the Time Charter to the OWNER TRUSTEE, and
- b. The reassignment of those monies to an INDENTURED TRUSTEE who will act on behalf of the Bondholders (the lenders who have purchased the bonds to finance part of the acquisition costs of the vessel) to secure the bonds related to each vessel and to insure their redemption and payment.

Four, the Bondholders are provided a First Preferred Ship Mortgage, through the Indentured Trustee, on the vessel as a first lien on that vessel.

#### D. SOLICITATION OF EQUITY PARTICIPATION

Each of the awardees in the TAKX and T-5 programs selected a financial advisor to arrange the equity and debt investments required for each program. The awardees and their respective advisors are: [Ref. 20]

General Dynamics  
Maersk Lines  
Waterman Steamship  
Ocean Shipholdings

Salomon Brothers, Inc.  
Morgan Guaranty Trust  
Citibank and Manufactures  
Hanover Leasing Corp.  
Shearson Leasing Corp.

To ensure a coordinated approach to the solicitation of equity investments, each potential equity source was required to operate through one of these four advisors. Potential equity investors, identified by the advisors, were invited to submit proposals for participation in the programs. Each advisor was given the exclusive right to work with the potential equity participants in developing proposals for submission to the Contractors and the Navy. No other investment group was authorized to submit proposals or to solicit any potential equity source other than those identified by the advisors. [Ref. 20]

#### E. CHARTER HIRE PAYMENTS

The Charter Hire payments to be paid by the Navy for the TAKX ships consist of two parts. One part, the Operating Hire compensates the ship operator for the day to day operation of the ship. The operating hire covers such expenses as manning, fuel, cargo handling, port charges and expenses, maintenance, repair and other normal operational expenses. These costs are incurred regardless of whether the TAKX ships are leased or purchased. For that reason, operating hire payments are ignored in the lease versus purchase cost comparisons.

The other part of the Charter Hire payment is the Capital Hire payment. The capital hire payment is analogous to a lease payment. The capital hire reimburses the lessor's cost of acquisition and provides a satisfactory

rate of return on the lessor's investment. Capital hire rates are calculated to take into account all financial aspects of the charter transaction.

Capital hire rates form the competitive basis from which the Navy selects the TAKX equity participants. Prospective equity participants submitted capital hire rate bids based on complex calculations which took into account the following minimum elements: [Ref.20]

a. Ship Delivery Provisions:

- (1) Capitalized costs of ship construction
- (2) Time to delivery after contract award
- (3) Time of delivery in relation to lessors tax year

b. Charter Provisions:

- (1) Total length of charter term
- (2) Number and timing of capital hire payments

c. Tax Provisions:

- (1) Availability of ITC
- (2) Availability of ACRS depreciation rates
- (3) Depreciable basis of asset (100% or less)
- (4) Lessor's tax rate

d. Debt/Equity Participation:

- (1) Percent of lessor's equity participation
- (2) Percent of lender's participation

e. Debt Provisions:

- (1) Interest rate on lessor's long-term loans
- (2) Number and timing of debt service payments
- (3) Loan commitment fees

f. Lessor's required rate of return on investment;

g. Residual value of the ships at the end of the charter;

h. Discount rate applied against the future cash payments;

i. Other Elements:

- (1) Lease transaction costs
- (2) Closing costs

F. SUMMARY OF PRINCIPAL TERMS

1. Basic Capitalized Costs

The basic capitalized costs represent the official costs of constructing each ship and are specified in each Agreement to Charter between the Navy and a contractor and include the following: [Ref. 19: pp. 13-18]

Fixed Costs which include: (1) the cost of construction of new ships; or the cost of acquisition and conversion of existing ships; and (2) the cost of inspection and supervision during that construction or reconstruction.

Other basic capitalized costs included legal, financial and consulting fees incurred during construction. Also included were a third group of costs incurred in arranging the interim and long-term debt necessary to finance the construction of the ships. Those costs included: (1) the cost of interim (construction) loans; (2) the interest on existing debt during conversion of existing vessels; (3) debt placement fees; and (4) permanent loan (bond) commitment fees.

2. Termination.

The Navy may elect not to renew the Time Charter as to each Vessel at the end of its basic term or any renewal period or at any time after the Basic term for the



convenience of the Government. If it does so, the Government is obligated to pay a Termination Value (net of sale proceeds received) calculated to pay the outstanding Bonds issued to acquire the vessel and to return to the equity participants their investment plus the agreed upon rate of return to date after taking into account any net tax liability associated with the termination. [Ref. 19: p. 28]

### 3. Adjustments to Capital Hire

The Capital Hire rates are stipulated in each ship's Agreement to Charter, and are subject to adjustment for a number of items including changes in the amount of basic capitalized costs, or in the anticipated delivery date of the ship. Adjustments are also made when changes occur in the anticipated interest rate payable on the bonds or for changes in the amortization schedule for the bonds. Adjustments are also made for changes in the Internal Revenue code, and other applicable official regulations, and changes in the anticipated tax benefits associated with the transaction. [Ref. 19: pp. 19-24]

In arriving at a Capital Hire figure, the equity participants were required to deposit with the Navy on a "confidential - business sensitive" basis the information and assumptions that were used by the equity participant in computing the Capital Hire rates that formed the basis for their bid. To be included those assumptions were:

- a. After-tax yield
- b. Residual value

c. Tax assumptions

d. Methodologies

4. Tax Conditions Precedent

In its guidance for the solicitation of bids for equity participants, the Navy outlined the tax rulings upon which potential participants were to base their proposals. The major rulings the Navy sought to obtain from the IRS included the below listed items. [Ref. 20: pp. I.6 - I.9]

A ruling that the bareboat charter between the Owner Trustee (representing the equity participants) and the contractor was a lease and that the Trust was considered the lessor and the contractor the lessee, and that the lease payments constituted rent. Also that the Trust would be treated as the purchaser, owner and lessor of the vessel.

Other assumptions included that the the Trust would be entitled to accelerated cost recovery deductions; that the bonds sold to finance the vessel constituted indebtedness for which the Trust would be entitled to interest deductions. The transaction was not to be subject to the "finance lease" provisions of the Revenue Code. Also the following conditions concerning the Investment Tax Credit were to apply: [Ref. 20: p. I.9]

- a. Vessels to be converted will qualify as "new property" entitling the Trust to the ITC and ACRS.
- b. The Time Charter will be considered a service agreement rather than a lease or sublease, and that the vessel(s) will not constitute property that is used by the Government for purposes of the Revenue Code.

## 5. Other Conditions Precedent

The major consideration in this area was receipt of an opinion of the General Counsel of the Navy confirming the "full faith and credit" nature of the Navy's obligations under the Time Charter and compliance with existing laws and regulations, together with certificates of the Comptroller of the Military Sealift Command or the Comptroller of the Navy confirming that required amounts for the payment of Charter Hire liability during the Basic Term of the Time Charter have been obligated in the Navy Industrial Fund and required amounts for the payment of termination liability have been obligated in the current Operation and Maintenance, Navy, appropriation account, in accordance with all applicable laws and regulations.

## 6. Special Federal Tax Benefits Indemnity

The Navy promised to provide the equity participants with indemnities for the loss of following Federal income tax benefits: [Ref. 20: pp. I.11 - I.14]

- a. Current cost recovery deductions for Federal income tax purposes will be equal to 95% (or 100% if so elected) of Basic Capitalized Costs less amortizable fees and expenses; and
- b. Current deductions for Federal income income tax purposes determined in accordance with the Trust's method of accounting for interest on the Bonds after the delivery date; and the Investment Tax Credit (ITC) will equal 10% (or 8% if so elected) of the excess of Basic Capitalized Costs over amortizable fees and expenses.

The Navy agreed to indemnify each equity participant against loss or recapture of the Federal income tax benefits described above if such loss or recapture occurred as the direct result of the Time Charter being treated as a lease under existing law or under any legislation enacted into law during the current session of Congress.

#### G. TAKX IMPACT ON NAVY INDUSTRIAL FUND

The TAKX charters are paid by the Military Sealift Command through the Navy Industrial Fund (NIF). The NIF is one of five working capital funds within the Department of Defense. A working capital fund is a revolving fund which is used as a source of financing for work that will be paid for by a customer of an activity after the completion of the job. The NIF is used as a management tool to provide a means of controlling costs and monitoring budget performance. The NIF receives the majority of its funding through the annual Defense Budget as part of the Navy's Operations and Maintenance (O&MN) appropriation. The NIF is composed of fifty different activities, one of which is the Military Sealift Command.

The NIF operates under a simple concept. As funded customer orders are received by the various NIF activities, the NIF uses its resources to finance the costs necessary to procure the services or material needed to support the customer's order. The NIF activities then bill their

customers for the costs the NIF incurred in providing the services or material.

Overall NIF management is provided by the Comptroller of the Navy (NAVCOMPT) who has the responsibility under Section 3679 of the Revised Statutes (30 USC 665) to avoid over-obligation of NIF funds in excess of those appropriated. Specifically, NAVCOMPT must ensure that the total value of outstanding obligations of the NIF do not exceed the algebraic sum of unobligated NIF funds and the unbilled balance of NIF customer orders. NAVCOMPT must also ensure that the total NIF cash balance is not less than zero.

[Ref. 21: pp. H.3 - H.7]

The long term lease of Navy ships presents a special problem. No government funding provision exists to cover future charter obligations. The Military Sealift Command is required to obligate NIF funds according to the length of the charter. That is, if the charter period is for 5 years, MSC must obligate the entire 5 year cost of charter. In addition, most charter agreements include a early termination penalty which requires MSC to set aside contingent funds, normally 10 percent of the outstanding termination liability. Navy ship construction funds (SCN) could be used to cover these long term obligations, but that would require the Navy to give up new construction funds in the amount of the leasing obligation. O&MN funds cannot be used for long term obligations, because they are



appropriated annually. The Navy has opted to commit its long term leasing obligations against the unobligated NIF balance. [Ref. 18: p. 6-9]

The impact of these MSC obligations on the total NIF is significant. At the beginning of FY 1985, the unobligated balance of the NIF was \$392 million. The MSC portion of that balance was a negative \$2.2 billion. In other words, MSC was obligated for \$2.2 billion more than it had funds or unbilled charges. [Ref. 22]

As alluded to above, the reason for the huge negative MSC unobligated balance is the nature of the obligation required to record a ship charter. MSC is required to obligate NIF funds for the entire length of a ship's charter. In many cases, those charters run up to five years. In addition, MSC is also required to obligate NIF funds for part of the early termination penalty which is required by most charter agreements. MSC is only able to bill its customers, who use the charter vessels, for one year of those services at a time. Thus MSC incurs up to five years worth of charter costs plus a portion of the early termination penalty, but is only able to recover one year's cost of chartering and nothing for early termination penalties. These obligation requirements result in MSC's unobligated NIF account being overdrawn by a significant amount.

Given that backdrop, the thirteen vessel TAKX program with its five-year charters and substantial early termination penalties presented the Navy with a significant funding problem. The NIF account will be required to absorb an additional yearly charter cost of about \$218 million. In addition, the NIF must also provide for a 10 percent contingency fund on the outstanding early termination penalty which will require another \$130 to \$320 million (this is a cumulative, not an annual requirement).

[Ref.18: pp. 5-5 & 6-12]

To avoid any possible RS 3679 violations, the Navy recently took two actions. One, it directed MSC to only enter into single year charters where possible. Two, early termination contingencies were obligated against the entire O&MN appropriation, rather than the NIF account. [Ref. 22]

#### H. CONGRESSIONAL INVOLVEMENT AND INITIATIVES

Leasing by tax-exempt entities became a source of great concern to Congress in 1983 and 1984. Congress' concern centered on two issues: (1) the magnitude of the loss of tax revenues resulting from the transfer of tax benefits from tax-exempt entities to taxable entities; and (2) the lack of Congressional oversight and control of leasing by Federal agencies like the Department of Defense.

In an attempt to stem the loss of tax revenues resulting from leasing by tax-exempt entities two bills were proposed in 1983. The House version, titled the "Government

Leasing Act of 1983" H.R. 3110, was authored by Congressman Pickle (D-Ohio). It proposed to reduce the depreciation deductions and investment tax credits available in leases which involve tax-exempt entities. The Senate version, titled the "Government Lease Financing Reform Act of 1983" S. 1564, was introduced by Senators Dole, Metzenbaum, Durenberger and Grassley. It also proposed to reduce the tax benefits available when tax-exempt entities enter into leasing agreements. The Senate bill also took aim at the service versus use issue in leases by providing specific criteria on which to base a determination. The present status of these bills is unknown. In 1984, Congress passed the Deficit Reduction Act of 1984, which accomplished many of the objectives of the earlier House and Senate bills described above.

The Deficit Reduction Act of 1984 (DRA) provided specific rules governing leasing by tax-exempt entities. DRA significantly restricts the tax-benefits, primarily the investment tax credit and the accelerated cost recovery system (ACRS), previously available to lessors who leased assets to tax-exempt entities. DRA stipulates that real property which is leased must be depreciated using the straight-line method over a 40-year period. DRA further provided guidelines for determining whether a lease constitutes a use or service arrangement. [Ref. 23]

The effect of these bills will be to essentially prevent future lease transactions such as the TAKX transaction. The leveraged lease is dependent upon tax benefits to provide the lessor with an acceptable rate of return, while providing the lessee with a lease rate that is below his normal cost of financing. The Deficit Reduction Act of 1984 greatly limits the availability of those tax benefits when tax exempt entities lease assets.

Congress also moved to gain greater control of long-term leasing by the Department of Defense. The 1983 and 1984 Defense Authorization Acts were amended to permanently require the services to obtain Congressional authorization before entering into long-term leases for any aircraft or naval vessel. Long-term was defined as any lease, charter, service contract, or conditional sale agreement the term of which was five or more years, or more than one-half the useful life of the asset. The services were further directed to provide in their requests for authorization to lease or charter an analysis of the cost to the government, including lost tax revenues, of leasing compared with the cost of direct procurement. Congress also directed the Director of the Office of Management and Budget and the Secretary of the Treasury to jointly issue guidelines for determining under what circumstances the Department of Defense could lease or charter rather than directly procuring aircraft or naval vessels. Congress further

directed the Secretary of Defense to provide Congress with a listing of all leases, charters, service contracts and conditional sales agreements whose terms were for one year or longer which were to be funded either directly or indirectly by the Defense budget. [Ref. 24]

## I. SUMMARY

Chapter III has presented an overview of the TAKX transaction. Many of the basic issues, which have stirred much of the controversy surrounding the TAKX transaction, were also addressed. The nature of the Navy's tax indemnity guarantees were detailed. The significant impact of MSC leasing on the Navy Industrial Fund was also presented. The Congressional initiatives to control leasing by tax-exempt entities and by the Department of Defense, in particular, were discussed.

Finally, the structure of the transaction and its principal terms were provided to facilitate the reader's understanding of the lease-versus-buy cost studies which are analyzed in the next chapter.



#### IV. LEASE VERSUS PURCHASE COST-BENEFIT ANALYSES

In February 1983, the Joint Committee on Taxation presented a report to the Subcommittee on Oversight of the House Committee on Ways and Means, which was sharply critical of the leasing aspects of the Navy's TAKX build and charter program. That report asserted that the decision to lease instead of purchase the TAKX vessels would result in the Government paying, on the average, about \$21 million (11.7 percent) more per ship. The total excess cost of leasing over purchase for the entire TAKX program was estimated to be \$270 million. [Ref. 25: p. 2]

The Joint Committee on Taxation (JCT) report was in stark contrast to earlier cost-analysis studies initiated by the Navy and the Department of Defense which had concluded that leasing through a Build and Charter program was significantly less costly than a purchase program on a discounted basis. The most detailed of these reports was written by the Navy's leasing agent, Argent Group, Ltd., which provided analysis that chartering each TAKX ship would enable the government to save about \$29 million or 16.1 percent when compared with a direct purchase. In total, Argent projected that leasing would save the government almost \$381 million. [Ref. 26: p. 3]

In June 1983, further attention was drawn to the TAKX transaction by Forbes magazine. Forbes was sharply critical of the terms of the Navy's deal. The Forbes article specifically criticized the "unusually attractive" tax benefits and the guarantee of an "impressive 11.745 percent after tax rate of return" given to the equity participants in the lease transaction. The article also criticized the Navy's agreement to indemnify the equity participants against the loss of certain tax benefits. [Ref 27]

This chapter will examine the various cost-analyses of the TAKX program and detail the different assumptions and methodologies which have helped to precipitate the controversy described above. The intent of this review is not to judge which analysis or methodology was the best. Rather, this chapter will attempt to clearly present the issues which cloud any analysis of this sort. Cogent arguments are made for the positions taken in each of the studies. In the end, however, one must reconcile the question of whether the TAKX leveraged lease is more costly to the government than a purchase would have been. That reconciliation, however, is also much like an assessment of beauty--it lies in the eyes of the beholder.

While this chapter will analyze the various lease-versus-buy cost comparisons, it is important to remember one salient fact. All of these analyses assume the presence of a purchase option. The basis for the criticisms

leveled by JCT and GAO is that a purchase alternative to acquire the TAKX ships existed. As was noted in Chapter III, however, Congress had declined to appropriate funds for the purchase of those ships and instructed the Navy to pursue other means to meet its Marine rapid deployment support responsibilities. In light of the absence of a purchase alternative, the validity of a lease-versus-buy cost comparison becomes questionable.

While assumptions differ among the studies, the basic structure and definition of costs are the same. The Navy obtains the services of a vessel which is operated by a third party. The vessel is bareboat chartered to the operator who in turn time charters the vessel to the Navy. The Navy pays a charter hire payment which is divided into two components: (1) the capital hire, which repays the debt and equity financing provided by the lessor and debt participants plus interest and an agreed upon rate of return; and (2) the operating hire, which pays the operator for his services in operating the vessel for the Navy.

The lessor's rate of return is derived from two sources: (1) the excess of the capital hire payment over that amount necessary to repay principal and interest due to the debt participants; and (2) the tax benefits available to the lessor accruing from ownership of the vessel (depreciation and interest deductions, and investment tax credit). Under such an arrangement, it is theoretically possible for the

lessor to offer low-cost financing in the form of reduced capital hire payments to a lessee who is not in a position to take advantage of the tax benefits. Such a lease arrangement can be viewed as a loan which bears an effective interest rate below that which would normally be available to the lessee under a conventional loan arrangement.

[Ref. 28]

#### A. LEASE VERSUS PURCHASE ANALYTICAL METHODS.

The decision to lease or buy an asset requires the analyst to compare the costs and benefits associated with each form of acquisition. Any such comparison must take into account the timing differences in the cash flows associated with each of the two alternatives. The total cost of leasing is the sum of the series of periodic payments made over the life of the lease term. The cost of buying depends upon whether the asset is purchased with or without debt. If the owner is able to buy the asset without having to borrow, the cost of the asset is simply its purchase price. If the owner must borrow in order to finance the purchase, then the real cost of the asset is the sum of the down payment and the principal and interest payments made over the life of the debt instrument used to help finance the acquisition.

To make a meaningful comparison between the lease or buy (or borrow) alternatives, analysts must reconcile these timing differences because of the time value of money. More

simply put, the value of a dollar paid at the beginning of a contract term is greater than a dollar paid at the end of a contract term. The difference is evaluated as equivalent to the interest which can be earned on money that is held rather than spent and the effects of inflation.

Analysts account for such timing differences using present value calculations which provide the value now of a series of payments to be made periodically in the future. The most frequently used lease versus buy analysis is the Net Present Value approach which requires the decision maker to: [Ref. 29]

- a. Determine the amount and timing of the periodic costs to be incurred under the purchase and lease alternatives.
- b. Select an appropriate discount rate which reflects the user's cost of capital in acquiring the asset.
- c. Discount the cost streams determined in step 1 above and select the alternative which has the lowest present value total.

While the process appears simple enough, in practice such analysis is complicated by several factors. First, There is no universally accepted method for determining an appropriate discount rate. Arguments abound for using any one of a myriad of methods for discount rate determination including: the incremental cost of debt, the cost of equity, the weighted average cost of capital and a number of risk adjusted and tax adjusted variants of these methods.

Second, The identification of those costs and benefits to be included in the analysis. Some elements are easily



recognized as certain to occur, but are very difficult to specify in exact monetary terms. Other elements are less certain, such as the residual values, and equally difficult to specify in dollar terms.

Given those vagaries, it not suprising that the various analysts who have studied the TAKX lease versus purchase decision reached different conclusions. This chapter will look at four of the principal studies which analyzed the TAKX acquisition. Two of them, the Navy sponsored Argent Group analysis and the Department of Defense sponsored Institute of Defense Analysis study, concluded leasing the TAKX ships was less expensive on a net present value basis than buying. Two other studies, one by the Joint Committee on Taxation and the other by the General Accounting Office, arrived at the opposite conclusion. The results of these analyses, and their underlying assumptions and methodologies are examined below.

#### B. NAVY AND DOD COST-ANALYSES

The Navy initiated two cost-analysis studies to assess the costs of a TAKX Build and Charter program. The first study, conducted by the public accounting firm Coopers and Lybrand, established the feasibility of using a leveraged lease to procure the TAKX ships. In April 1982, the Navy selected Argent Group, Ltd., after competitive bid, to assist the Navy as "packager" in structuring and implementing the TAKX leveraged lease. As a first step in

that direction, Argent conducted a more detailed analysis of the TAKX leveraged lease. This study assessed the costs to be borne not only by the Navy, but also by the Treasury and the Government as a whole.

The Argent study employed a sophisticated commercial leasing model called the Lease Analysis System (LAS) to predict the various cash flows and rates of return to the participants. Those costs were discounted at various rates including the OMB directed rate of 10 percent and compared against the costs of an outright purchase. Argent determined that leasing enjoyed a cost advantage at discount rates above 7%. That is, as the discount rate was increased above 7%, the present value cost of a Charter became less and less expensive than an outright purchase. Conversely, Argent noted that as the discount rate decreased, the present value cost of the Charter alternative increased. In other words, the charter alternative was more expensive on a present value basis than the purchase alternative for discount rates below 7%. [Ref. 28: pp. 11-15]

Argent continued its analysis by pointing out that the discount rate used in present value analysis should reflect the expected cost of borrowing money over the period of the investment. At the time of the study the government's cost of borrowing was about 14 percent. Thus, Argent concluded that it was more cost effective to charter the TAKX vessels than to purchase them. Figure 3 graphically depicts the

effect of the discount rate on the present value costs of the charter and purchase alternatives. [Ref 28: pp. 11-12]

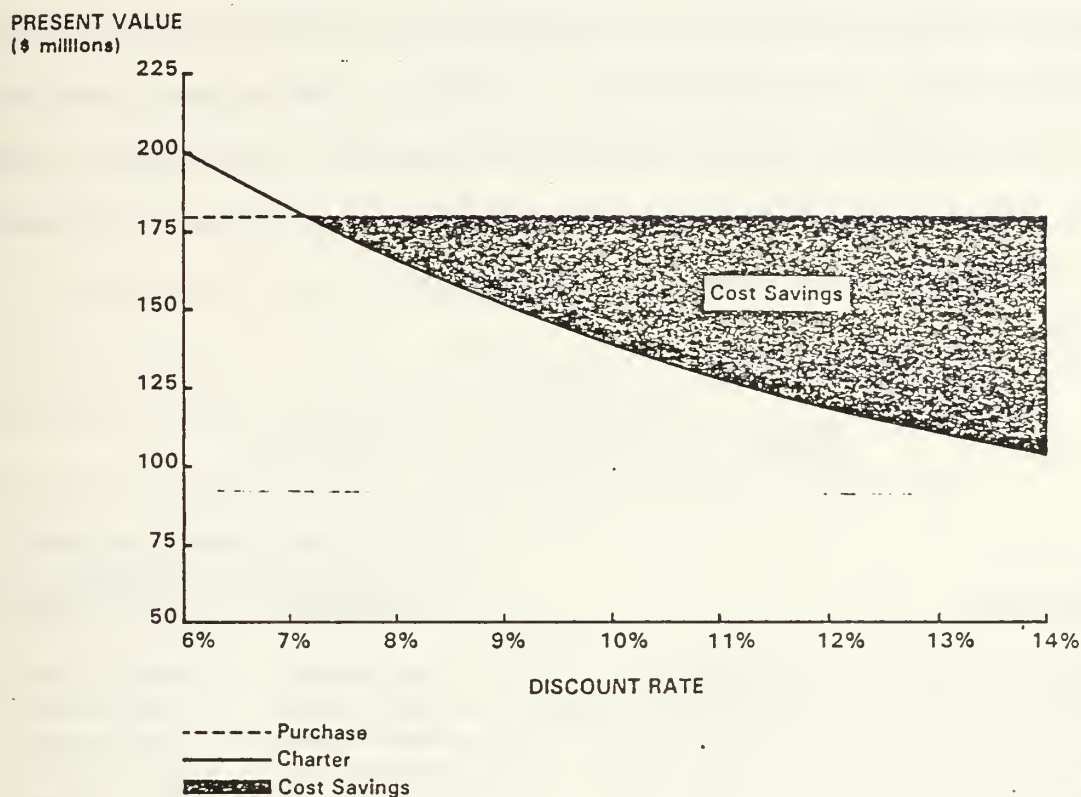


Figure 3  
Effect of Discount Rate on  
Cost Savings of Charter vs. Purchase  
[Ref, 28: p. 12]

The conclusions reached by the Argent analysis were supported by a cost-analysis conducted for the Department of Defense by the Institute of Defense Analysis (IDA). The IDA study also addressed the effects of long-term interest rates on the present value of a long-term lease. IDA noted that a

decrease in interest rates precipitated a corresponding decrease in the amount of the periodic lease payments. This reduction reflected the lower financing costs available to the equity participants. Thus, on a discounted (present value) basis, a decline in long-term interest rates particularly favored leasing. IDA also noted that several variables impacted the discounted value of the lease stream. IDA summarized its sensitivity analysis of those variables in table 1 below: [Ref. 18: p. S-13]

TABLE 1  
Summary of Sensitivity Analysis

VARIABLE:	EFFECT ON LEASE PAYMENT IF VALUE OF VARIABLE:	
	INCREASES	DECREASES
Rate of Return to Lessor	Increase	Decrease
Interest Rate on Long-Term Debt	Increase	Decrease
Discount Rate	Decrease	Increase
Lender Tax Rate	Decrease	Increase
Percent of Owner's Equity	Increase	Decrease
Investment Tax Credit (ITC)	Decrease (1)	Increase (2)
1 - ITC allowed		
2 - ITC not allowed		

The major premise which the Argent methodology adopted for its comparison of the costs of purchase and lease was to account for the tax revenues as well as the tax expenditures which resulted from the leasing option. Tax expenditures consist of the loss in tax revenues collected by the Treasury due to the lessor taking advantage of interest and depreciation deductions and the investment tax credit.

Argent argued, that since tax expenditures were accounted for, it was also necessary to take into account the revenue gain to the Treasury from the taxes on the income resulting from the capital hire payments received by the lessor, interest received by the lenders, transaction fees received by the various parties to the transaction, and earnings on the tax deferrals (assuming a sinking fund treatment of those tax deferrals). [Ref. 25: pp. 5-7]

Proceeding under that assumption and discounting at 10.25 percent annually, Argent determined that leasing was \$29.3 million less costly than purchase of a TAKX ship costing \$182.4 million. See Table 2 for a detailed breakdown of the costs. [Ref. 25: p.4]

Table 2

Argent Cost Comparison of the  
Lease Versus Buy Alternatives  
(figures in \$ million)  
[Ref. 25]

ITEM	NAVY ACCT	TREASURY ACCT	GOV'T COST
Cost, New Ship	-182.4		-182.4
Lease Payments	131.7	-59.7	72.0
Tax Benefits:			
ACRS		80.4	80.4
Interest Deductions		39.7	39.7
Amortized Fees		.7	.7
Residual Cost	0.0		0.0
Tax Revenues		39.5	39.5
Totals	-50.7	21.4	-29.3



### C. CONGRESSIONAL COST ANALYSIS

In its report to the House Committee on Ways and Means, the Joint Committee on Taxation (JCT) took exception to the Argent assumptions and methodologies. They reasoned that whenever the Government leases, its cost of capital consists of the rental payments and the net tax benefits provided to the lessor. JCT reasoned that for a lessor to be willing to enter into a lease the combination of rental payments and tax benefits had to be large enough to cover his cost of capital which consisted of: the decline in value of the asset as it ages, interest and principal payments to the lenders for the loans used to help purchase the ship, a rate of return on the equity provided by the investors to buy the ship, and fees paid to third parties to structure and implement the lease. The JCT report further reasoned that the rate of interest paid by the lessor and the rate of return expected by the equity participants generally exceeds the interest rate on government debt because of the Government's superior credit. The JCT concluded, therefore, that whenever the Government leases, it compensates the lessor for greater financing costs than the Government would have borne had it borrowed funds and purchased the ship. [Ref. 25: p.18]

Proceeding on that basis, the JCT developed its methodology which took the position that it was not correct to count as an inflow to the Treasury the income taxes which



will be paid by the debt participants on the interest they receive from the loans they have made to the owner/lessor. The JCT reasoned that to count such tax revenues would require the similar tax revenues arising from the holders of Treasury debt borrowed to purchase the ship to be counted for consistent comparison. For that reason, the JCT chose not to count tax revenues arising from either transaction. Using those assumptions, the JCT determined that leasing of the same ship presented above in the Argent analysis would actually cost the Government \$20.8 million or 11.7 percent more than purchasing the ship outright. For a detailed breakdown of that calculation see Table 3. [Ref. 25: pp. 19-21]

Table 3

JCT Cost Comparison of the  
Lease Versus Buy Alternatives  
(figures in \$ million)  
[Ref. 25]

ITEM	NAVY ACCT	TREASURY ACCT	GOV'T COST
Cost, New Ship	-178.2		-178.2
Lease Payments	131.7	-59.2	72.5
Tax Benefits:			
ACRS		81.2	81.2
Interest Deductions		39.5	39.5
Amortized Fees		.7	.7
Residual Cost	9.5	- 4.4	5.1
Tax Revenues			
Totals	- 37.0	57.8	20.8

In June 1983, the General Accounting Office issued their analysis of the TAKX transaction in response to a Congressional inquiry requesting GAO review the practices and procedures followed by the Government in its long-term leasing of capital equipment. The GAO analysis closely paralleled the methodologies used by JCT and its findings were, not suprisingly, similar. GAO concluded that leasing the TAKX ship described in the Argent and JCT reports would cost about \$12.5 million more than if the Government bought the same ship. [Ref. 15: p. 16]

#### D. ANALYSIS OF COST DIFFERENCES

Although the Navy sponsored Argent analysis and the Congress initiated JCT analysis of the TAKX program based their analyses on the same ship (for the record, Maersk Vessel Number Three), they arrived at vastly different conclusions. As we saw in the previous sections, Argent concluded that the leasing alternative was \$29.3 million less expensive than the purchase alternative. JCT, on the other hand, arrived at the opposite conclusion and reported that leasing was \$20.8 million more expensive than the purchase alternative. The difference between the two is a significant \$50.1 million. See Table 4 below.

Underlying those conclusions were several differing assumptions. First, the two studies chose to treat the taxes arising from the transaction in different manners. The Argent analysis chose to include the tax revenues as well as

the tax expenditures resulting from the TAKX transaction. The JCT analysis chose only to count the tax expenditures. Second, the residual value was treated differently. The Argent analysis chose to exclude it while JCT included it in their analysis. Third, the studies disagreed on whether the costs of structuring and implementing the leveraged lease transaction should be included in the cost of leasing the ship. JCT chose to recognize those costs, while Argent did not. Finally, the two studies disagreed on the fundamental issue of the size of the lease equity market and the impact of the TAKX transaction on that market and, by extension, on Federal tax revenues.

Table 4

Reconciliation of Argetn and JCT Report Differences  
(figures in \$ million)  
[Ref. 26]

<u>Item</u>	<u>AMOUNT</u>
Treatment of Tax Revenues . . . . .	\$39.7
Treatment of Residual Value . . . . .	5.1
Treatment of Transaction Costs . . . . .	4.2
Rounding and Discounting . . . . .	1.1
Total . . . . .	<u>\$50.1</u>

1. Treatment of Tax Revenues

JCT objected to the inclusion of \$39.7 million in tax revenues which Argent projected would result from the TAKX transaction. The basis for that objection centered on the issue of whether it was appropriate to include such tax

reflows resulting from government outlays in determining the cost of an asset acquired by the government. Cost analysis can be conducted on a pre-tax or an after-tax basis. The pre-tax method discounts before-tax outlays at a before-tax discount rate, while the after-tax method discounts after-tax outlays at an after-tax discount rate.

For capital budgeting purposes, OMB requires government agencies to discount multi-year outlay programs at a specified pre-tax rate. OMB chooses a discount rate which reflects the government's pretax cost of funds: the prevailing interest rate on government bonds. Use of the pre-tax rate theoretically permits agencies to disregard the tax revenues which would flow back to the government in the form of taxes on interest paid to the holders of government debt when evaluating the cost of a multiyear program. Thus, in JCT's view, the inclusion of tax revenues resulting from the TAKX transaction constituted "double-counting" and resulted in underestimating the actual cost of the lease when comparing it to a purchase. [Ref. 25: p.21]

Argent responded to this objection by pointing out that the JCT position was only valid when comparing the TAKX leveraged lease with an "equivalent loan" alternative in acquiring the TAKX ships. The JCT analysis made the assumption that the ships would be procured using 100% debt financing by the Treasury. Under that assumption, tax revenues would be generated from interest on the debt in a

purchase just as tax revenues would be generated in a lease. Argent, on the other hand, made the opposite assumption that the ships would be procured using a cash purchase with no Treasury debt. Under the no debt assumption, inclusion of tax revenues resulting from TAKX is a proper reduction in the cost of a lease since those revenues do not exist under the no debt purchase.

Argent took the "double-counting" issue one step further by correctly pointing out that neither of the analyses had properly accounted for the tax revenues resulting from the purchase or lease alternatives. With today's budget deficits, government purchases are funded partially from tax revenues and the remainder from Treasury bonds. Proceeding under that assumption, Argent calculated the increase in tax revenues resulting from leasing TAKX over a purchase to be \$24.6 million. [Ref. 26: pp. 5-7]

## 2. Treatment of Residual Value

Accounting for the residual value of an asset when evaluating a lease versus buy analysis is important for two reasons. First, in order to properly compare the alternatives, the user must end up in the same economic position under the lease or the purchase decision. If the user buys the asset, he can presumably recoup some of its cost by selling it when he has finished using the asset. If the user leases the asset, however, the user forgoes any such residual benefit. In order to make the two



alternatives comparable, the residual value should be deducted from the cost of the purchase alternative.

Residual value is important for a second fundamental reason. The size of the lease rental payment is directly affected by the amount of residual value assumed for the asset at the end of the lease term. Lease payments, in conjunction with available tax benefits, are set at a rate to enable the lessor to recoup the cost of acquiring the asset and to provide an acceptable rate of return on the investment in the transaction. If the lessor assumes some level of residual value at the end of the lease term, the cost of acquisition is lowered and the size of the lease rental payments (assuming no change in available tax benefits) are set accordingly. If the lessor assumes zero residual value at the end of the lease term, the lease rental rates must increase to reflect the higher cost of acquisition.

Thus, on the first count, the JCT inclusion of a residual value was correct. The amount of the residual value, however, is open to discussion in view of the anticipated 25 year lease term. Argent conceded that some residual value should be assumed, but argued that the figure used in the JCT report was overly optimistic. Argent assigned a residual value of 20% of original cost, which was consistent with IRS requirement that the lessor show that there will be at least an estimated 20% residual value and

useful life at the end of the lease term. Discounting that amount over the life of the lease, Argent concluded that it reduced the advantage of leasing over purchasing by \$1.7 million, from 29.3 million to \$27.6 million. [Ref. 25: pp. 19-20]

The impact of the zero residual value assumption on the size of the lease payments and the lessor's rate of return, however, was not addressed by either of the reports. If the lease proposals the Navy received from prospective lessors assumed zero residual value at the end of the lease term, then the lease payments reflected a higher acquisition cost than if some residual value had been assumed. Given those higher lease rental payments and assuming that a residual value does exist at the end of the lease term, the lessor recovers that residual value twice: once in the form of higher lease rental payments and again in the form of the residual value which he realizes upon disposing of the asset at the end of the lease term. This issue will be discussed in greater detail in Chapter VI.

### 3. Treatment of Transactions Costs

The JCT analysis reduced the cost of purchasing the vessel under study by \$4.2 million to reflect the avoidance of those costs thought to be unique to the leasing alternative. Argent conceded that the transaction costs of a purchase would be lower than those of a leveraged lease, but argued that the Navy received certain benefits such as

construction cost overrun protection which were worth at least \$4.2 million. [Ref. 25: p. 19]

While there is a certain amount of merit in Argent's argument, it fails to take into account that each TAKX ship construction contract provided for a \$5 million "Changes Fund" which was designed to cover changes or extras deemed necessary during construction which often cause cost overruns. [Ref. 19: p. 7] Would a purchase contract have included such a provision for changes? If the answer is no, then the Argent position has little validity. If the answer is yes, then Argent's position is well taken.

Argent further argued that if the Government chose to restructure the transaction as a purchase it would incur costs similar to those for leasing in order to do so. In other words, since the transaction had been arranged to proceed as a lease, any move to restructure to a purchase would represent an incremental cost to the purchase alternative. In the end, a purchase would cost the government the same as if stayed with the lease. While that may be true, that explanation still sidesteps the real issue--leasing does require higher transaction costs than does an outright purchase.

#### 4. Nature of Lease Equity Market

One of the fundamental differences between the JCT and Argent studies was their perception of the size of the economic community which is willing and able to take

advantage of tax shelter opportunities such as TAKX. JCT summarized the two positions in the following manner:

"Two consultant's reports commissioned by the Navy contend that none of the tax benefits generated by a TAKX arrangement should be counted as a governmental cost of leasing....The argument for not counting the tax benefits assumes that private parties would find an alternative means of sheltering their income from tax if the TAKX opportunity were not available... The realistic response, on the contrary, is for investors to add the TAKX arrangements to the pool of profitable ventures to be undertaken. This increases the total amount of tax benefits claimed for investments...[Thus] net tax benefits to the Navy's lessor should be counted in the government's cost of leasing a TAKX ship." [Ref. 25: p. 18]

Argent pointed out the weakness to the JCT position by noting that the number of commercial entities which participate in transactions of the magnitude and complexity of the TAKX deal are quite limited. While the JCT position is appealing from a theoretical view, it ignores the basic requirement which precipitates tax sheltering schemes in the first place: taxable income. Institutions which participate in transactions like TAKX do so to shelter large, but finite, taxable incomes. Thus, while there may be several opportunities available, institutions are limited in taking advantage of those opportunities by the limits of the income which they are trying to shelter in the first place.

For the government to take the view that the existence of TAKX increases the number of tax benefits used by the private sector is overly simplistic and ignores financial reality. The number of available opportunities to shelter income almost certainly exceeds the number of

institutions which need to shelter income. The primary consideration that determines which opportunities institutions will undertake is their assessment of the risk involved. The government position assumes that TAKX is one of only a few acceptable tax sheltering mechanisms available to the market. Such an assumption seems to lose validity when firms such as General Electric and IBM are able to shelter all or most of their income from taxes.

The real question which does arise from this discussion, however, is whether the rate of return provided by the TAKX transaction is overly generous in view of the level of risk associated with the transaction. That question will also be addressed in Chapter VI.

#### E. RECONCILIATION OF COST DIFFERENCES

Table 5 provides a monetary reconciliation which summarizes the conclusions reached by the foregoing analyses of the differences between the various government and Navy cost studies. This reconciliation, calculated on a present value basis, concludes that leasing is less expensive than buying the TAKX ships. Note, however, that the primary contributing factor to reaching this conclusion consists of taxes on interest income which results from the TAKX transaction. Unfortunately, the inclusion of tax revenues resulting from a leasing agreement is contrary to the new OMB/Treasury guidelines for determining the cost of a lease. That new guidance includes tax expenditures, but does not



include the tax revenues generated by a government transaction. That new guidance is discussed in the following section.

TABLE 5

Reconciled Cost Comparison of the  
Lease Versus Purchase Alternatives  
(figures in \$ million)

ITEM	NAVY ACCT	TREASURY ACCT	GOV'T COST
Cost, New Ship	-178.2		-178.2
Lease Payments	134.8	- 60.6	74.2
Tax Benefits:			
ACRS		79.8	79.8
Interest Deductions		39.5	39.5
Amortized Fees		.7	.7
Residual Cost	3.1	- 1.4	1.7
Tax Revenues		39.7	39.7
Total	- 40.3	18.3	- 22.0

#### F. OMB/TREASURY GUIDANCE FOR LEASE VERSUS BUY ANALYSIS

In 1983, the Office of Management and Budget was directed by Congress in the 1984 Defense Authorization Act to issue guidelines governing the circumstances under which the Department of Defense was authorized to use lease or charter arrangements to procure services of aircraft and ships. Notably, the TAKX ships were exempted from any new policy originating from the new guidelines.

The treatment of tax subsidies in lease versus buy comparative cost analyses was one of the largest issues OMB had to address in determining leasing guidelines. One study

prepared by the Department of Defense Program Analysis and Evaluation (PA&E) section noted that at least four separate lease analysis methods were used by various Federal agencies. Within the Department of Defense, the Navy and the Air Force used significantly different lease evaluation methods. Some of the methods analyzed leases on a pre-tax basis, while others used an after-tax approach. PA&E specifically criticized the Navy methodology for using a after-tax discount rate of 10 percent which understated the cost of a lease. PA&E argued that the Government's after tax borrowing rate was well below 10 percent and that a lower after-tax discount rate was appropriate. [Ref. 30]

In October 1984, OMB and the Department of the Treasury issued a joint set of guidelines prescribing the procedures to be used by the Department of Defense in determining when a long-term lease for ships or aircraft was more advantageous to the government than a direct purchase.

Those guidelines apply to: [Ref. 31]

- a. Any leases that involve the use of an aircraft or naval vessel built for the express purpose of being leased to a Defense Department component; and
- b. Any other long-term lease, or lease which imposes a substantial termination liability, for an aircraft or naval vessel valued at \$1 million each at the time of acquisition.

The OMB/Treasury guidance defined a long-term lease to be any lease which acquired new property for a period of 3 years or more, or 5 years or more for used property. A termination liability was considered "substantial" if its

present value is at least one-fourth of the asset's current fair market value, or when added to the discounted present value of prior lease payments, is more than one-half the price of the asset.

The OMB/Treasury guidelines do not apply to short-term leases of 3 years or less for new property or less than 5 years for used property. Also, the guidelines do not apply to leases which acquire assets valued at less than \$1 million.

#### 1. OMB/Treasury Leasing Policy

The OMB/Treasury guidelines specifically directed the Department of Defense not to use long-term leasing as an alternative to direct purchase unless leasing could be shown to be less expensive than a direct purchase.

The new guidance stipulated that all lease-versus-buy cost comparisons were to be made on the basis of the discounted (present-value) cost of the lease and the purchase. The cost of leasing was to include both the cost of the lease payments made by the DoD component, and the tax subsidy provided by any special tax benefits claimed by the lessor as a result of the lease. The guidance considered the Investment Tax Credit and accelerated depreciation deductions to be "special" benefits. [Ref. 31]

Finally, the guidance directed the Department of Defense to avoid leases which deferred payment past the time that services would be rendered by the asset. It further

directed DoD to structure leases with equal annual payments or payments that decreased over time, and to avoid leases which provided for larger lease payments in later years.

## 2. OMB/Treasury Lease Analysis Methodology

The new guidance directed that Department of Defense lease analysis be conducted on a pre-tax basis, since government expenditures are measured as the direct outlay cost with no consideration for the taxes which may be collected from that outlay. The guidance further directed that lease costs be expressed in current, as opposed to, constant dollars. Lease costs were considered to consist of the direct lease payments plus the cost of the tax benefits claimed by the lessor.

The cost of the tax subsidy is not, however, the simple summation of the tax benefits claimed by the lessor. The cost of the subsidy provided by accelerated depreciation deductions is not the entire ACRS deduction, but rather the present value of the excess of the accelerated depreciation deduction allowance over the depreciation deductions that would have been available if the economic depreciation were used for tax purposes. Theoretically, the economic depreciation represents the actual economic decline in the asset's value over time. For the purposes of the OMB/Treasury guidance, economic depreciation is determined using the IRS Asset Depreciation Range (ADR) schedule. Since tax benefits are not generally taxed, the OMB/Treasury

guidance requires the tax subsidies be converted to pre-tax outlay equivalents. These equivalents are determined by dividing the cost of the tax subsidy by one minus the current highest corporate tax rate  $(1 - T)$ , where  $T$  is the tax rate.

For example, if the ITC associated with a lease was \$10 million, the current equivalent pre-tax outlay would be:

$$\$10 \text{ million} / (1 - .46) = \$18.5 \text{ million}$$

where the current highest corporate tax rate is 46 percent.

The discount rate to be used in computing the present value of the cost of a lease is the interest rate on new Treasury securities whose maturity most closely corresponds with the term of the lease, increased by one-eighth of a percent. The additional amount represents the current borrowing fee charged government agencies by the Treasury.

The new OMB/Treasury guidance directs the Department of Defense to use the following computational formula in determining the present value cost of a lease. The present value cost of the lease, is compared with the purchase price of the asset to determine whether the lease alternative is less expensive than a direct purchase. If the lease term is less than the useful life of the asset, the cost of the purchase alternative is adjusted to reflect the remaining residual value. The adjusted cost of a purchase is determined by deducting the discounted value of the asset's



estimated market resale value less disposition costs from the purchase price. [Ref. 31]

$$\text{Lease Present Value} = \sum_{t=1}^n \frac{L_t}{(1+r)^t} + \sum_{t=1}^n \frac{\frac{I_t}{1-T} + \frac{T(A_t - D_t)}{1-T}}{(1+r)^t}$$

where,

- $L_t$  = Schedule of lease payments.
- $I_t$  = Schedule of ITC available.
- $T$  = Lessor's tax rate.
- $r$  = Discount rate.
- $D_t$  = Economic depreciation.
- $A_t$  = Depreciation available under the tax code.
- $n$  = Term of the lease.

## G. SUMMARY

The purpose of this chapter has been to review the major studies which analyzed the TAKX transaction in an effort to understand the different assumptions and methodologies which led to entirely different conclusions about the cost of leasing the TAKX ships.

Each of the studies used a present value approach to compare the costs of leasing with those of buying a ship. Such a method was necessary to equate different cash flows arising from the two alternatives. One of the significant differences between the Navy's primary cost study and those of two Congressionally sponsored cost studies was the treatment of the taxes associated with the transaction. The Navy study, conducted by its leasing agent Argent Group, Ltd., included both the tax expenditures and tax revenues

resulting from the TAKX transaction. The Congressional studies conducted by the JCT and GAO included the costs of tax expenditures, but considered it inappropriate to include tax revenues resulting from the transaction. That single difference accounts for the majority of the disparity between the conclusions reached in the studies.

In October 1984, the Office of Management and Budget and the Department of the Treasury promulgated a lease analysis methodology which specifically addressed the issue of what tax elements were to be included as costs of a lease. That methodology adopted a before-tax approach which avoids any measure of tax revenues resulting from government expenditures. That methodology is different from those used by the various agencies which compared the costs of leasing and purchasing the TAKX ships. Unfortunately for the Navy, the new methodology is much more onerous than the methodologies it used in making its lease-versus-purchase cost comparisons. Significantly, it only considers the tax expenditures resulting from a tax-oriented lease transaction and none of the tax revenues. The ramifications of this new guidance will be addressed in Chapter VI.

## V. SHIP FINANCING IN THE PRIVATE SECTOR

U. S. maritime objectives can be broadly described as providing the ocean shipping capability needed for national defense, development of international commerce and protection of American economic interests from noncompetitive market influences. The development and maintenance of an internationally competitive American merchant marine has been a long-standing goal in achieving those objectives.

U. S. maritime policy has developed over a long period of time. The first legislative measures passed in support of American maritime interests were made in 1789. The Shipping Act of 1916 and the Merchant Marine Act of 1936 firmly established the Federal interest in insuring a strong and competitive American maritime industry. The Merchant Marine Act of 1970 reaffirmed that support and recognized the crucial role which the U. S. Merchant Marine played in the economic growth and security of the country. [Ref. 32]

In recognition of the vital role which their merchant shipping fleets play in furthering national economic and defense interests, governments provide substantial direct and indirect assistance to those fleets. Ocean transportation is a capital intensive industry. The cost of a ship is normally well beyond the means of shipping

companies. They are, therefore, forced to obtain financing through third parties such as banks or other large institutional investors.

Long-term borrowing is a common method of financing acquisition of a ship. Long-term debt is usually financed in one of two ways: (1) borrowing directly from major financial institutions; or (2) selling marketable securities in the form of bonds. Unfortunately, American shipping securities are not usually highly regarded and must, therefore, provide a premium rate of return to investors. One form of Federal assistance to the U.S. maritime industry has been to develop programs which provide financing that permit U.S. companies to compete in the international market. Another means by which ocean shipping companies acquire ships is through leasing. Leasing is accomplished through the use of charter agreements which can be drawn for both long-term and short-term needs. [Ref. 33: pp. 93-98]

The purpose of this chapter is to review the various financing methods available to U.S. shipping firms in acquiring the use of shipping assets. This review will then provide a basis from which to compare the Navy's acquisition of the TAKX ships with existing industry practices.

#### A. PRIVATE FINANCING

Ocean transportation is a capital intensive industry. Ships are big ticket items which constitute the largest part of a shipping company's fixed assets. Money to acquire

ships is provided by various classes of owners and creditors. Some shipping companies look to commercial banks as their principal source of financing ships. The amount loaned by a bank is normally determined as a percentage of the ship's cost. Banks normally limit their loans for acquisition of ships to 50 to 80 percent of the total cost of the ship being acquired. The terms usually associated with such loans are in the range of five to eight years. Commercial banks normally charge three types of financing costs: (1) interest and spread, (2) a management fee, and (3) a commitment fee. While interest rates vary between nations, in the United States the prime interest rate is used as the base rate for a ship loan. Commercial banks generally charge two percent above the current prime rate, but if a shipping company's credit is considered low the bank will frequently charge an additional percent to compensate for the greater risk. A management fee of less than one percent is charged to cover the cost of processing and administering the loan. Finally, a commitment fee of about one percent is charged to cover the period when bank funds are committed to the loan, but not yet drawing interest. To secure the loan, banks normally demand one or more of the following kinds of collateral: [Ref. 33: p. 97]

One, a First Mortgage on the ship in the form of a maritime lien. The maritime lien creates an interest in the ship which is recognized in all admiralty courts and follows



the ship wherever it sails. It cannot be extinguished by a change of title or possession, or by the death or insolvency of the shipowner.

Two, a Second Mortgage on another ship(s) in which the borrower has a substantial unencumbered equity interest.

Three, the Assignment of Charter Hire which the shipowner expects to receive from chartering (leasing) the vessel. This collateral assures the bank that charter hire revenue goes for debt service.

Four, the Guarantee from the shipping company's parent or affiliate that it will stand behind the debt.

Five, the Assignment of Insurance to protect the bank in case of catastrophic loss of the secured ship.

As a general rule, shipping companies are able to acquire bank financing with terms that generally range from five to eight years. Ships, however, are long-term assets which generally have economic lives of 20 to 25 years.

[Ref. 33: p. 162] Shipping companies expect to recover their investment in the ship and make an acceptable profit through the sales of its transportation services over that long-term period. As a result, the five to eight year terms which commercial banks offer are often too stringent for some shipping companies. These companies have two alternatives: (1) use some form of equity financing, or (2) seek federal assistance.

Equity financing has the advantage of freeing the shipping company from often strenuous debt service obligations, which is especially important during periods of slack demand. On the other hand, the magnitude of a ship's cost would require a substantial equity offering which will dilute earnings from existing operations and could later threaten the owner's control. In addition, the volatility of maritime earnings make the equity securities of shipping companies difficult to sell in the quantity needed to finance ship acquisitions. [Ref. 33: p. 106]

#### B. FEDERAL MARITIME SUPPORT

Ocean shipping companies which cannot or choose not to raise capital through commercial bank loans or equity financing can make use of various federal programs to help them arrange financing to purchase ships. Some take the form of subsidies, while others are simply guarantees which enable private concerns to take advantage of the government's superior credit. This paper will discuss only three of these many programs. They are: (1) the Construction-Differential Subsidy Program, (2) the Federal Ship Financing Program (Title XI), and (3) the Capital Construction Fund Program.

##### 1. Construction-Differential Subsidy

The Construction-Differential Subsidy (CDS) program was established by the amended Merchant Marine Act of 1970 to provide Federal construction subsidies to U. S.

shipbuilders. The size of the CDS is determined by either negotiated contracts or the difference between U. S. competitive bids and the lowest cost foreign bid for an equivalent vessel. The CDS is designed to place the construction costs of ships built in the United States on a parity with foreign construction costs. The subsidy is intended to foster growth and maintenance of both the U. S. merchant marine and the U. S. shipbuilding industry.

Eligibility requirements to qualify for the CDS include: (1) the prospective purchaser must be a U. S. citizen, (2) the ship must be built in a U. S. shipyard, and (3) the ship must be used in the foreign commerce of the United States. [Ref. 34]

The Construction-Differential Subsidy program is presently unfunded and is unavailable for use by the shipping industry.

## 2. Federal Ship Financing Program (Title XI)

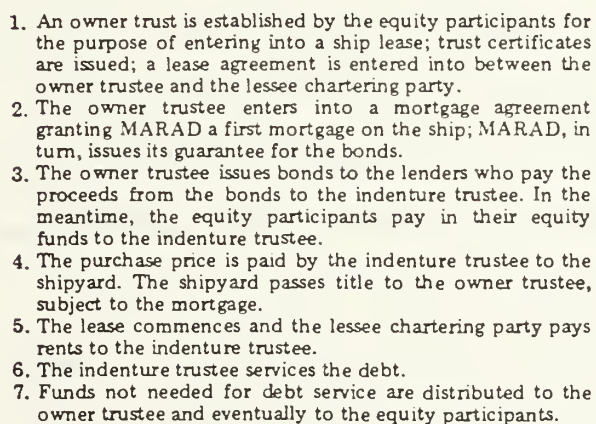
The Federal Ship Financing Program provides for the full faith and credit guarantee of the U. S. Government for the debt obligations (normally bonds) issued by U. S. shipowners for the purpose of financing U. S. flag vessels. Title XI guarantees the prompt payment in full of the interest and the unpaid principal on those debt obligations. That guarantee enables shipowners to obtain a AAA credit rating when issuing Title XI guaranteed debt offerings. That rating, which is usually not available to shipowners,

provides: (1) a lower interest rate than might otherwise be obtainable; (2) a longer term of financing; (3) more advantageous financial covenants; and (4) no requirement of personal guarantees by the owners of the ship. [Ref. 35]

The amount guaranteed by the government is based on the actual cost of the vessel. Title XI guarantees up to 75 percent of the vessel's capitalized cost if it is built using Construction-Differential Subsidy funds, and up to 87.5 percent of the capitalized cost if CDS is not involved. The Maritime Administration, as administrator of the guarantee program, charges an annual fee of 1/8 percent to one percent depending on the credit rating of the company involved. Bonds guaranteed by the government under Title XI can have a term of up to 25 years. Title XI bonds can also be used as the long-term debt in a leveraged lease, which enables the lenders to rely upon the government guarantee in assessing the risk of the transaction. Normally, that guarantee permits the equity participants to obtain the most attractive financing rates available and a longer term. See Figure 4. [Ref. 16]

### 3. Capital Construction Fund

The 1970 amendment to Section 607 of the Merchant Marine Act of 1936 authorized the Capital Construction Fund (CCF) program. The CCF was created to assist owners and operators of U.S. flag-vessels in accumulating the large amounts of capital necessary to acquire new ships. The CCF



Leveraged Lease Using MARAD Guaranteed Debt  
[Ref. 16]



program uses the deferment of Federal income taxes on deposits of money or other property placed into the fund to enable shipowners or operators to build or acquire U.S. built ships. The CCF program of tax deferrals was designed to counterbalance the competitive disadvantage of American flag operators relative to foreign flag operators whose vessels are registered in countries that do not tax shipping income. [Ref. 36]

Through the mechanism of tax deferment on deposits in the CCF, the fundholder can rapidly accumulate a pre-tax fund for the acquisition of ships built in American shipyards and for repayment of mortgages on such qualified ships. By the investment of assets in the fund, a shipping company can compound the fund benefits and develop an even greater pool of tax deferral funds. However, the investment of the fund in securities and stocks is subject to certain restrictions which are intended to preserve the integrity of the fund. The restrictions stipulate that the money in the fund program may be invested only in certain low-risk securities such as U.S. government obligations, and that fund assets may not be invested in the securities of an affiliated company. [Ref. 33: pp. 42-43]

To qualify for the program, the applicant must be a citizen of the United States and own or lease one or more eligible vessels. Additionally, the applicant must demonstrate to the Maritime Administration that it has the

financial capabilities to accomplish the proposed acquisition program. While the CCF program is intended to encourage the acquisition of new vessels, it specifically excludes proposals intended to acquire existing vessels or to provide payment of the principal on existing indebtedness. [Ref. 36]

The Capital Construction Fund recognizes two classes of vessels for the purposes of the fund. Eligible vessels are ships which will produce income which may be deposited into the Fund. Qualified vessels are ships which are built or otherwise acquired with the aid of qualified withdrawals from the CCF. To qualify for the purposes of the CCF program, both classes of ship must be constructed in the United States, be documented under U.S. law, and be operated in the foreign or noncontiguous domestic trade of the United States. [Ref. 36]

The CCF account is not a joint account between the fundholder and the Maritime Administration. Rather, it is an individual account established by the fundholder in a bank of its choice and maintained like any other checking or savings account. Deposits are subject to minimum and maximum limits which are stipulated in the CCF agreement. Minimum limits are set to insure that sufficient funds are deposited to accomplish the agreement's objectives. Maximum limits are set to control the scope of the resulting tax deferments. The maximum permissible deposit for any one

taxable year must not exceed the sum of the following:

[Ref. 36]

- a. Taxable income from the operations of eligible ships.
- b. Annual depreciation on eligible ships.
- c. Net proceeds from the sale, disposition or insurance indemnity of eligible ships.
- d. Earnings from the investment or reinvestment of amounts on deposit in the fund.

The deposit of depreciation charges has no effect on the operator's tax liability, since these charges are fully deductible from the operator's net income for income tax purposes. Accordingly, they are known as tax-paid deposits. Deposits of taxable earnings and capital gains, on the other hand, reduce the operator's immediate tax liability. Accordingly, they are called tax-deferred deposits because tax on them has only been postponed.

Deposits are made into one of three different accounts depending upon the manner in which the funds would have been taxed if not deposited. The three accounts recognize the different deferred tax liability on the money deposited into the fund. That difference is important when withdrawals are made in the future and effect the depreciable basis of the vessel acquired using CCF funds. The three accounts are:

- a. Ordinary Income Account
- b. Capital Gain Account
- c. Capital Account

Deposits into the Ordinary Income Account are made from otherwise taxable income of the fundholder. This permits the fundholder to reduce his total taxable income by the amount deposited into the fund. Interest and other ordinary income earned on assets held in the fund are also deposited without tax liability into this account.

Deposits into the Capital Gain Account represent amounts which would otherwise be taxed at the capital gains rate. The CCF permits the fundholder to defer those taxes until they are withdrawn at a later date.

Deposits into the Capital Account represent amounts, such as depreciation, that would not be taxed. While there is no immediate tax benefit, it allows the fundholder to invest these amounts and defer the tax on the earnings or gain from those investments since all earnings and gains from fund assets must be deposited back into the fund.

[Ref. 36]

Appendix A provides a general example of how the CCF can be used to help finance the purchase of a new ship.

Withdrawals from the CCF are divided into qualified and nonqualified for tax purposes. In general, qualified withdrawals receive tax preference treatment. Nonqualified withdrawals generally incur tax liability in the year of withdrawal.

To be classified as a qualified withdrawal from the fund, it must satisfy the following requirements: [Ref. 36]

- a. The withdrawal must comply with the terms of the agreement between the shipping company and the Maritime Administration.
- b. The withdrawal must be used to acquire, construct or reconstruct a qualified ship.
- c. The withdrawal must be used for the payment of debt service incurred in connection with the acquisition of the qualified ship.

If the money is withdrawn from the capital gain account for the acquisition of a qualified ship and its complement, the cost basis of the operational assets for tax purposes is reduced by an amount equal to 62.5 percent of the withdrawal in the case of a corporation. For taxpayers other than corporations, there is a 50 percent reduction in the basis. The portion of the qualified withdrawal which comes from the ordinary income account and goes toward the acquisition of a qualified ship reduces the basis of the operational assets by a like amount. That is, the cost basis of the operational assets is reduced dollar for dollar. Thus, when the qualified withdrawal is made, taxes are not payable through the reduced depreciation deduction during the economic life of the ship.

All withdrawals which do not meet the requirements of a qualified withdrawal are termed as nonqualified withdrawals. Although these nonqualified withdrawals may or may not result in taxable income, there are no penalty provisions relating to nonqualified withdrawals. These nonqualified withdrawals are considered to have been made



from the three accounts of the capital construction fund in the following order: [Ref. 36]

- a. Ordinary Income Account. The shipping company includes this portion of the account in taxable income in the year the withdrawal is made.
- b. Capital gain account. The shipping company includes this amount in taxable income in the year of withdrawal. It is reported as an item of long-term capital gain recognized during the year in which the withdrawal is made.
- c. Capital account. When money is withdrawn in excess of the ordinary income account and the capital gain account, it must be made from the capital account. It is tax free.

#### C. SHIP LEASING (CHARTERING)

Chartering is the maritime equivalent to leasing. As discussed in Chapter Two, chartering ships is attractive to ship operators because it permits lower period payments than a purchase alternative. The chartering company can offer such lower rates because it uses the cash flows created by the tax benefits of ownership and pass them back to the charterer in the form of lower charter rates. Chartering takes one of two basic forms: a time charter or a bareboat charter. Each is unique in important ways.

Time charter is the leasing of a ship by a shipowner to a Charterer for a stated period of time at a stipulated rate. The shipowner provides wages, repairs and consumable stores and the charterer is responsible for the payment of fuel, cargo handling and port charges. Time charters may be short-term or long-term leases depending on the charter

party terms. Both time charters are qualified and accounted for as operating leases because the shipowner retains all the normal risks of ownership and the charterer gains no special property interests other than certain usage rights.

The Bareboat Charter also involves the lease of a ship to a charterer for a certain period of time at a stipulated rate. The charterer pays all operating expenses of the ship, including wages, fuel, repairs, consumable stores, cargo handling and port charges. The charterer obtains complete control of the ship which he is operating as if the ship belonged to him. Bareboat charters are often for long-term periods with charter hire payments due on a "hell or high water" basis. Noncancelable long-term bareboat charters qualify as capital or financing leases.

1. Advantages to Charter:

- a. Financing

The charterer has complete financing potential through the charter hire. No down payment is necessary from the charterer since the shipowner finances the total purchase price. Because lease terms can be structured for much of the useful life of the asset, the charter often provides long-term financing not normally available.

- b. Flexibility

The charterer is able to charter a ship for the specific time period necessary to meet his requirements and is not saddled with ownership problems. The charterer can

structure the charter term to meet his shipping needs and not have to make arrangements for full utilization of a ship over its useful life. [Ref. 33: p. 123]

c. Level Payments

Charter payments permit matching expense to revenue produced from operation of the vessel. In addition, the fixed nature of charter payments enables the charterer to know the exact amount of future financing costs and to predict more accurately future cash needs. The fixed nature of the payments also enable the charterer to take advantage of future inflation much like a purchase.

2. Disadvantages:

a. Control

The charterer has no control over the chartered vessel at the conclusion of the charter term. Also during the term of the charter, the charterer is restricted in his potential usage of the chartered vessel.

b. Hell or High Water Payments

The charter-hire rental payment is a fixed charge which the charterer must meet when due regardless of the chartered ship's activity. Should the charterer miss his payment, he is liable not only for the missed payment but also for any losses the shipowner would suffer for the remaining term of the charter. [Ref. 33: pp. 123-124]

c. Loss of Residual

The lessee or charterer retains no monetary interest in the value of the asset at the end of the charter term despite any remaining life or usefulness left in the asset.

d. Cost of Early Termination

The terms of a charter, like a lease, are set at a rate which will enable the owner/lessor to recover its investment and earn an acceptable return over the length of the charter. To protect the lessor incase that charter period is abridged by the charterer, a termination penalty is stipulated. The cost of terminating a charter early is set at an amount sufficient to enable the lessor to recover its investment and earn the desired rate of return.

[Ref. 16]

e. Indemnities and Other Complexities

The use of ship leases is often predicated upon the use of tax benefits to subsidize the transaction. The charterer is usually required to indemnify the lessor against the loss of those tax benefits in order to entice the lessor into the transaction. The documentation, number of parties involved, and complexity in providing that indemnity assurance result in time consuming and expensive transaction costs. [Ref. 17: pp. 1260-1261]

The use of leveraged leases in conjunction with government support programs such as Title XI and the Capital

Construction Fund can result in particularly attractive financing costs for ship charters. Title XI debt guarantees permit access to the lowest cost capital available which lowers the annual debt service requirements for all parties. The CCF permits the equity participants to shelter income at particularly advantageous rates, not normally available to other financing arrangements.

#### D. CAPITAL CONSTRUCTION FUND AND LEVERAGED LEASING

Since leveraged leasing has become such a popular means of financing the construction of new commercial ships, the CCF program has adapted to accomodate its special structure. Normally in order to use a CCF, the fundholder had to be the owner of the vessel. In a leveraged lease arrangement, as we saw earlier, title to the vessel is actually held by an owner trustee. The CCF program has been adapted, however, to recognize that the equity participants, although not actually holding title, have significant ownership interest in the vessel and are therefore entitled to enter into a CCF agreement.

By the very nature of the leveraged lease, there is likely to be no taxable income generated for the equity participants in the early years due to the excess of allowable income tax deductions over income. The primary source of early deposits into the fund, therefore comes from the deposit of funds equal to the depreciation taken. The early deposit of the maximum allowed owing to depreciation



is important for a CCF participant, because it permits the greatest amount of tax deferral interest income to be accumulated. The combination of the depreciation deposits and the tax deferred interest income on those deposits, if made early enough, are often sufficient to fund the entire debt service requirements over the entire term of the mortgage. [Ref. 37]

#### 1. Single-Vessel Agreements

The CCF agreements held by equity participants in leveraged lease arrangements are informally called "Single Vessel Arrangements". Normally the Maritime Administration will not enter into a CCF agreement to acquire an existing vessel, however, it recognizes that in leveraged leases the equity participants are not usually determined until the new vessel is about to be delivered. Consequently, an equity participant is allowed to enter into a CCF agreement with the objective of making withdrawals from the fund for its pro rata share of the principal payments on the indebtedness, if the Maritime Administration is notified prior to fixing the financing terms of the leveraged lease. The deposits into the fund for single vessel agreements come from the equity participant's share of depreciation of the vessel and income from the lease. [Ref. 36]

Each equity participant may establish a fund with the same ship being both the eligible and qualified agreement vessel. That is, the equity participant is

permitted to use the vessel purchased under the leveraged lease as the eligible vessel from which the funds come for deposit into the CCF. That same vessel is also considered to be the qualified vessel for which the equity participant can use those CCF funds to purchase the vessel. The lessee may also identify the ship as an eligible agreement vessel in its own CCF. [Ref. 36]

The single-vessel agreement permits a leveraged lease equity participant to set up a CCF account using funds generated by the ship that was purchased. For the equity participant, those funds normally consist of the depreciation taken on the vessel. Periodic deposits in the amount of permissible depreciation are placed into the Capital Account where they earn interest. Deposits are made until a balance is attained which can provide for annual withdrawals for the required debt service over the remaining life of the debt instrument. Those withdrawals will reduce the principal in the Capital Account to zero by the end of that term. In effect, the equity participant is able to set up a self-liquidating fund to purchase the agreement ship using the depreciation on that same ship. Appendix B provides an example of how the single-vessel agreement can be used.

## 2. Capital Construction Fund Benefits Model

The Maritime Administration attempted to develop a CCF Benefits Model for the purpose of analyzing the

financial benefits associated with participation in the Capital Construction Fund program. The CCF Benefits Model should have calculated three values the sum of which determined the total Fund benefit to fundholders. Those values consisted of: (1) interest which accrues on the deferred tax dollars deposited in the fund; (2) interest which the fundholder does not incur because an interest free loan of its deferred tax dollars is available in lieu of a commercial loan, and; (3) evaluate the effect of possible partial loss of the Investment Tax Credit which may reduce the absolute benefits received from the CCF.

The model was to have used data furnished by the users regarding the size of their deposits into the fund of ordinary income from vessel earnings, net proceeds from vessel sales and depreciation or other capital deposits. Withdrawal information was also used including such items as the cost of the vessel to be paid for using CCF funds, the method of financing, the depreciation method and the residual value. Other information included assumed Federal tax rates, fund investment rate of return, interest rates on borrowed funds and a discount rate.

The model was intended to provide a listing of expected cash flows and fund balances such as the balance of aftertax amounts in the ordinary income, capital gain and capital accounts by period, and the balance of tax deferred amounts in the ordinary income and capital gain accounts by

period, and provide a summary of the total amount of tax benefits taken by fundholders. In addition, it was to have produced the interest earned benefit on deferred tax dollars, the depreciation available on the acquired asset with and without CCF considerations, the tax affect of changes in depreciation, the balance of deferred tax dollars being utilized by the fundholder and the resulting interest savings accruing to the fundholders on the interest free loan of deferred tax funds. Finally, it was to have shown the ITC computed with and without CCF consideration, and sum all benefits received on a by-period basis, a cumulative basis and on a discounted present value basis. [Ref. 38]

Unfortunately, the effort to develop this model proved more complex than originally thought. In an attempt to make the model general enough for use by the diverse makeup of possible CCF participants, the model became too large and complex to be of much benefit. The Maritime Administration has abandoned further development of the model for the time being and instead relies on the computations developed by potential CCF participants.

#### E. SHIP LEASING UNDER THE ECONOMIC RECOVERY TAX ACT OF 1981

As discussed in Chapter Two, the passage of ERTA repealed many of the requirements necessary to qualify as a true lease in the eyes of the IRS. ERTA greatly enhanced the transferability of investment tax credits and tax depreciation deductions between taxable entities. Under

ERTA, the parties to a lease no longer had to ensure a non-tax related profit as the basis for the transaction. ERTA also provided a ninety-day window which permitted firms which had placed equipment into service in 1981, prior to ERTA's passage, to enter into tax benefit leases. Among the various lease forms which emerged as the result of ERTA, the sale and leaseback transaction became very popular.

The Sale-Leaseback is a transaction in which the lessor buys a vessel from a charterer and simultaneously bareboat charters it back the charterer. The nominal sales price of the vessel is set at its present value, but the only outright payment made by the buyer to the charterer is for the value of the tax benefits realized by the lessor as a result of the transaction. The lessor signs a non-recourse note assuming the outstanding debt on the vessel is payable over the same term as the charter. The charterer agrees to pay the lessor charter payments which exactly offset the debt service on the loan. The net effect of this transaction is that the charterer has reduced its acquisition cost of the vessel by the amount it receives from the lessor for the tax benefits it gives up. The lessor earns a return on the money it would have otherwise paid in taxes. [Ref. 17; pp.1268-1269]

As the Federal government came to realize the magnitude of its tax revenue loss as the result of the "safe-harbor" leases permitted under ERTA, it moved to curtail many of



ERTA's provisions. The Tax Equity and Fiscal Responsibility Act (TEFRA) greatly restricted the use "safe-harbor" leases and essentially reinstituted pre-ERTA leasing requirements.

#### F. SUMMARY

The ocean shipping industry is particularly capital intensive. Few, if any, shipping companies are able to finance the acquisition of new ships directly from internal sources. Private shipping companies are largely dependent upon banks and other large financial investment institutions to provide the capital necessary to acquire their ships. The United States government, recognizing the strategic importance of a strong national maritime capability, has developed several programs to financially assist private U.S. shipping companies. Three of the most important federal maritime assistance programs were described.

Chapter V has been presented to provide the reader with an understanding of the financing practices of the private sector in acquiring new ships. Such a review is necessary to provide, in so far as possible, a yardstick from which to compare the TAKX transaction with private sector practice. Such a comparison is necessary to determine the competitiveness of the TAKX terms. Those comparisons are made in Chapter VI.

## VI. ANALYSIS OF TAKX LEASING ISSUES

The purpose of the preceding four chapters has been to present the reader with an understanding of the various issues which have surrounded the Navy's TAKX leveraged lease. Each chapter has dealt at some length with a particular aspect of that transaction and the Federal leasing environment in an effort to illuminate the complexity of lease analysis and lease agreements. The diversity of those chapters and the issues which were raised in them, however, have painted a broad brush picture of the various aspects of the TAKX transaction and Federal leasing in general. This chapter will attempt to place the major issues in proper perspective.

This chapter will review and analyze further the major issues which have been identified in previous chapters from two vantage points. First, the TAKX transaction provides an opportunity to look critically at government lease versus buy cost comparison methodologies and guidelines. Second, TAKX enables us to compare the government's methods and costs of leasing with those found in the private sector when leasing similar assets.

### A. GOVERNMENT LEASE-VERSUS-BUY ANALYSIS

Prior to the TAKX transaction, no formal guidelines existed for government lease-versus-buy cost comparisons.

The General Accounting Office noted the impact of the lack of such guidelines in its report to Congress on Defense Department leasing:

"Evaluation of the various lease versus purchase analyses showed a lack of prescribed criteria on how these analyses should be performed or what factors should be included or excluded. Consequently, there can be vast differences in the results of such analyses even for the same program." [Ref. 15: p. 8]

The major inconsistencies alluded to by GAO included the following:

1. Differing Methods of Analysis

No formal guidance existed to prescribe the criteria for performing a lease-versus-purchase analysis. Each of the major studies which analyzed the TAKX transaction used a different net present value model. Not surprisingly, each of those studies arrived at different conclusions about the feasibility of the lease option. In developing its own lease analysis program, OSD's Program Analysis and Evaluation division found four different lease analysis programs within the government itself.

The basic issue of which costs, agency cost or total government cost, should be used to evaluate potential lease projects was not specified in existing guidelines. No common consensus existed over whether a pre-tax or an after-tax method should be used in evaluating the cash flows of a lease. There was no agreement on the discount rate to be used when determining the net present value of long-term leasing costs. Further disagreement existed over the

treatment of residual values and whether to use current or constant dollars in lease versus purchase analysis.

In an attempt to come to grips with these problems, especially where Defense Department leasing was involved, Congress directed OMB to provide a specific set of guidelines for evaluating future lease or charter programs. As discussed in Chapter Four, those guidelines require, among other things:

- a. The cost of leasing must include both the current dollar cost of lease payments and the cost of tax benefits claimed by the lessor.
- b. The cost of the tax subsidy resulting from the lessor's use of tax benefits must be converted into a pre-tax equivalent.
- c. The discount to be used in computing the present value of a lease is the interest rate on new Treasury securities whose maturity most closely corresponds with the term of the lease, increased by, one-eighth of a percent.

While the new OMB guidance resolves the issue of ambiguity in lease versus purchase analysis, it effectively closes the door on long-term leasing by the Department of Defense. Such automatic closure is open to criticism on two points.

First, the OMB guidance assumes that all lease versus buy analyses should be conducted on a "cost to the government" basis. In other words, OMB now requires government agencies to include the cost of tax subsidies as part of the total cost of a lease. Is that proper? The answer to that question depends on what Congress' intent was

when it passed laws permitting tax subsidies. One of the major purposes of tax subsidies of the type used in the TAKX transaction is to induce new capital formation. If a tax-exempt governmental agency undertakes a program that increases capital formation, then only the direct agency cost should be considered. In effect, this view assumes Congress intended for the government to pay for increased investment by the private sector through decreased tax revenues.

At the center of this issue is the government's loss of tax revenues. In an era when budget deficits are becoming increasingly burdensome, Congress is sensitive to charges that it is not fiscally responsible. In 1981, Congress faced the difficult task of stimulating the economy out of a recession while checking its own spending. By legislating the Economic Recovery Tax Act of 1981, Congress chose to trade increased tax benefits for increased capital growth. The explosive growth in the use of those subsidies by local, state, and Federal agencies, however, was an unforeseen consequence of that initiative. Forbes magazine estimated that leasing by tax-exempt entities tripled between 1980 and 1982 to an estimated \$2 billion. [Ref. 39]

Congress questioned the cost and the propriety of government use of tax subsidy programs. Yet, the question arises, should an individual Federal agency be expected to assume part of the cost of those subsidies? The new



OMB/Treasury guidelines for Department of Defense lease versus purchase analysis require such a fiscal assumption.

From a simplistic standpoint, one can argue that since the government must bear both the cost of Defense spending and tax subsidies which result from such spending, that it is proper to charge those costs against the Defense Department. That is, a defense contract may lead to new investment by a contractor, but at the expense of decreased tax revenues. OMB/Treasury guidance directs those revenue losses be added to the cost of the defense contract which precipitated that loss. But, doesn't such a stance ignore the basic premise for the tax subsidies in the first place? Tax subsidies of the type used in the TAKX transaction were the price the government was willing to pay for new capital formation. Does it matter who uses those subsidies as long as the longer term goal of increased capital formation is attained?

A second consideration is whether the new OMB guidance properly assesses the true costs of a long-term lease? OMB guidance dictates the use of a discount rate based on the government's cost of borrowing. Discount rate determination is a subject which has received a great deal of attention from the financial community over the years. Suffice to say, the private sector has yet to reach agreement on the best method of making such a determination. The government's selection of a discount rate is further

complicated by debate over whether the government's cost of borrowing is the proper figure to use as a discount rate.

Considerable support exists for using the opportunity cost which reflects the actual cost of capital in the private sector and thereby better measures the cost of real resources shifted from private to the public sector. Venkataraman and Stevens in their analysis of Federal capital budgeting noted that use of the government borrowing rate, which is lower than the opportunity cost, tends to favor higher and more immediate government spending. In other words, the lower discount rate favors the purchase alternative relative to the lease alternative. The use of the opportunity cost rate, however, favors deferring investments by the public sector. [Ref. 40]

For the TAKX program, the difference of a few percentage points in the discount rate results in substantial changes (literally millions of dollars) in the net present value of the long-term lease. The effects of the discount rate on the lease versus buy decision were graphically displayed in Figure 3 on page 69 of this study.

## 2. Lease-Versus-Not Buy

Probably, the most ignored facet of the TAKX transaction has been the failure of the critical studies to acknowledge that the purchase alternative was not an option. Procurement funds for Marine support ships were eliminated from the Defense budget in fiscal year 1981. In recognition

of the need for those ships, however, Congress recommended the Navy investigate the feasibility of using the U. S. merchant marine to provide the necessary shipping. In response to that direction, the Navy submitted the TAKX build and charter program in FY 1982, which was subsequently approved by four Congressional oversight committees.

As part of the justification for that program, the Navy provided a comprehensive lease versus purchase cost analysis. The Navy analysis compared Navy as well as total government costs of chartering as compared to an outright purchase of the TAKX ships. The Navy concluded that chartering ships from the U.S. merchant marine was not only feasible, but also practical from a financial standpoint. Subsequent to the review and approval by several Congressional oversight committees, the Navy's analysis was examined by the Joint Committee on Taxation (JCT) and the General Accounting Office (GAO). Both organizations issued reports that criticized the Navy's assessment of the costs involved in a long-term lease of the TAKX ships. Both JCT and GAO reported that chartering the TAKX ships would only be less costly to the Navy. From a total government perspective, however, chartering would be more expensive than an outright purchase of the ships.

The cornerstone of the criticism which has been leveled at the TAKX leveraged lease has been that the purchase alternative was available. Were this the case, the

Navy would not have had any reason for exploring the use of leasing to finance the acquisition of the TAKX ships. Are we to assume that if the GAO and JCT studies had been available at the outset, that Congress would have appropriated the funds for a purchase? Taken to its logical conclusion, that is the implication of the those studies.

While the analytical methods and assumptions used by JCT and GAO are judgmental, the major shortcoming of both reports was their failure to recognize or address the lease-versus-not buy decision facing the Navy. Both reports evaluated the lease option as though the Navy had a purchase option. Such an assumption might have been valid if that analysis was intended to determine, based on cost alone, whether the TAKX ships should be acquired in the first place. As noted above, however, cost was not the only criteria. Support for the Marines was also a primary consideration. Without Congressional approval of construction funds, the purchase option was precluded.

As noted in Chapter II, the decision to lease or buy is a secondary decision. The first decision to be made in the acquisition process is whether the assets or services are needed in the first place. Those needs are determined by the organization's goals and objectives.

Once the decision is made to acquire an asset, the question of how to finance the acquisition is addressed. The entity has two basic choices: buy or lease. The entity

determines the costs of both alternatives and chooses the least expensive. The decision to buy, however, assumes that funds to finance the purchase are available. In the case of defense procurement, appropriation funds must be authorized by Congress. In the case of the Marine support ships, such authorization was denied. The only remaining choices were to charter ships needed to support the Marines, or not support the Marines. Presumably, the Navy and Congress chose the former alternative.

Further credence is afforded the lease-versus-don't buy approach when one considers the basic question: Was Congress willing to buy the TAKX ships once its analysis concluded that to do so would be less expensive than a purchase? If it was not willing to do so, then the lease-versus-purchase methodology was inappropriate for the analysis of the TAKX transaction. The correct approach should have been a lease-versus-don't buy approach.

### 3. Advantages and Disadvantages of Long-Term Department of Defense Leases

Honig and Coley in their article on lease analysis noted one of the dangers of conventional lease analysis. The conventional procedure in lease analysis, is to establish a hypothetical "loan" equivalent to the lease against which the lease itself is compared. As Honig and Coley point out, however, the hypothetical loan is only "equivalent" in the narrow sense that the same asset is



acquired. The same financing is not acquired and debt capacity is impacted differently. [Ref. 41]

While the Navy does not have a debt capacity, per se, it does operate within definite funding constraints. If the TAKX ships had been purchased, ship construction funds would have been required for them. These funds come from the Navy's ship construction appropriation (SCN) which are part of its larger five-year defense plan. Funds for construction are set within finite limits, based upon the Navy's and Congress' assessment of ship needs to carry out future national defense missions. The TAKX program was not part of that plan. Acquisition of the thirteen TAKX ships would have required the Navy to give up construction of other, badly needed ships. Within those limits, critical choices would have to have been made about the types and numbers of ships to be procured.

Leasing, on the other hand, offered a way to procure both the TAKX ships and not impact the Navy's ship construction funds. Leasing is funded from the Navy's annual Operation and Maintenance appropriation by the Navy Industrial Fund. The long-term charter permits the Navy to spread the cost of using the services of the ships over their useful life rather than committing to a large up-front obligation for their outright purchase. Thus, the Navy faces a question not so much of acquisition, but one of cash flows. With a purchase, the Navy obtains title to a group

of ships, but at the cost of a large up-front cash outlay and an immediate, commensurate reduction in the acquisition of other ships. Chartering, on the other hand, obligates the Navy to a series of cash payments over a 25-year period and does not directly impact the acquisition of other ships.

The disadvantage to the Navy of using the Navy Industrial Fund to pay the "rental" cost of the TAKX ships is the loss of operations and maintenance funds normally used for fleet support. To offset the loss of O&M funds, the Navy is forced to either decrease other activities or increase its O&M appropriation. Either alternative carries with it an implicit opportunity cost. Any decision to reduce current activities to provide funding for TAKX results in the loss of some operation or maintenance activity. A decision to solicit a higher Operations and Maintenance appropriation may result in offsetting reductions elsewhere in the Navy budget. Seeking such increases also incurs some political expense in attaining that increase.

Both are difficult propositions. The projected annual charter costs are about \$217 million, which constitutes about 5 percent of the discretionary portion of the O&M budget (80-85 percent of the O&M budget is considered fixed). In view of the impact of TAKX on the O&M appropriation, it is likely the Navy will have to seek additional O&M funds. [Ref. 18: p. 6-9]

#### 4. Other Considerations

Present lease-versus-buy analyses concentrate solely on comparing the respective costs of acquiring a new asset. No consideration is given to an analysis of the benefits and savings which the government incurs as a result of the type of acquisition. The new OMB/Treasury guidance assumes that the price of an asset is always the same, regardless of whether the government buys or leases through an intermediary who buys the asset. Such an assumption is open to criticism on two points.

First, if the government purchases a ship, that ship must be built using standard government and military specifications. Under a lease, however, commercial specifications are applied during construction. Recent Department of Defense studies have concluded that the government's insistence upon building to required defense specifications increase the costs of acquisition to the government. [Ref. 42]

Second, the ability of the government to bring eighteen ships on line in the same period as the TAKX build and charter program is doubtful. As experience has shown, most Navy shipbuilding programs are subjected to delays as Congress attempts to reduce Defense budgets by delaying procurement programs. The affect of such delays has been to increase the overall cost of such programs.

Third, one could also take a philosophical view of leasing as an extension of the Federal government's move towards contracting for services from the private sector. The Federal government has been moving towards increased reliance upon the private sector, in such areas as public works and food service, as a way to reduce capital investment and benefit from the private sector's competitive advantages.

## B. PRIVATE SECTOR COMPARISON

To date, the major studies which have analyzed the TAKX transaction have concentrated on the development of analytical methodologies to be employed in conducting government lease versus buy cost comparisons. Little, if any, attention has been paid to analyzing the TAKX transaction from a private sector perspective. Such an analysis is important for two reasons. First, the potential government lessee should understand what motivates the private sector to lease its assets to the public sector. Second, the potential government lessee should be aware of the the risks and constraints which exist in the private sector leasing market and understand how government leases compare with the rates of return and financial risks in that environment.

### 1. 300% Offering For TAKX Equity Participation

In 1983, the financial advisors for each of the TAKX awardees solicited proposals from potential equity

participants for the TAKX and T-5 programs. The solicitation of those equity investments constituted a private placement in the sense that it was restricted to large institutional investors considered to have the ability to make commitments for substantial parts of the total TAKX program. In response to that solicitation, one knowledgeable source reported that the Navy received a 300 percent offering from potential equity sources.

Given the magnitude of the response for participation in the deal, the prudent question to ask is, why? Undoubtedly, several factors contributed to the attractiveness of the TAKX and T-5 programs. One major factor is that the programs were structured as leveraged leases and, as such, offered lucrative and potentially large tax shelters. In 1983, tax shelters were coming under heavy scrutiny by the Internal Revenue Service. Therefore, a government offered tax shelter was undoubtedly quite attractive to large financial institutions for at least two reasons. One, large financial institutions in search of tax shelters need them for very large sums of money. The availability of tax shelters in the hundred million dollar range is quite limited. Two, all tax shelters are inherently risky. The largest risk is the possibility that the IRS will not accept the tax sheltering scheme. Another concern is the inherent risk that the transaction will not be successful and will not generate the anticipated tax



advantages. These and other possible reasons are discussed in detail in the following sections.

## 2. Tax Indemnities

The tax indemnities of the TAKX transaction have been criticized on a number of points. The major source of contention has been the Navy's agreement to indemnify the equity participants in case of loss of the anticipated Investment Tax Credit to insure the agreed upon rate of return. The Joint Committee on Taxation (JCT) considered that indemnification provided exceptional protection against an unfavorable tax ruling. The JCT contention, however, has little credibility in view of private sector practice in writing lease agreements.

Leasing expert Peter Nevitt described the role of leasing tax indemnities by noting that, "Lease agreements generally provide for an indemnity against the possible loss by the lessor of the contemplated tax benefits." And more to the point, Nevitt added:

"From a lessor's standpoint, the lease rate contemplates that the lessor will be able to claim certain tax benefits, and the lease should be adjusted upwards or a cash settlement made if such tax benefits are not available. The lessor regards its risk as a lending risk, not a speculative risk on the availability of tax benefits..." [Ref. 10: p. 55]

Proponents of the TAKX transaction are also quick to point out another aspect of the ITC indemnity. If the ITC is ruled to be unavailable, for whatever reason, the Treasury and not the lessor benefits. If the lessor loses

the ITC, it adjusts the Navy's charter hire payments upward in the amount necessary to cover the increased tax burden. The Treasury receives that increase in the form of revenues it would have otherwise foregone. In effect, the Navy pays the Treasury for the lessor's loss of the ITC. Thus, the Navy's cost of charter increases, but the total cost to the government remains the same.

Schmitt and Crump in their analysis of this issue noted that if charter agreements did not provide for such tax indemnities, the lessor would set charter hire rates at a higher level to reflect the greater risk. Then, if the tax benefits were ruled available, the lessor would collect those benefits as well as receiving a higher charter hire rate. The Navy and the Treasury, on the other hand, would gain nothing from a favorable tax ruling. [Ref. 43: p.69]

For the reasons described above, the tax indemnity provisions of the TAKX transaction compare favorably with similar transactions in the private sector.

### 3. Guaranteed Rate of Return

The TAKX transaction has been criticized as providing an overly generous guaranteed rate of return in view of the substantial risks the Navy agreed to assume. One financial source, not connected with the transaction, evaluated the TAKX guaranteed 11.745 percent rate of return as that rate expected for a BAA rated long-term investment at the time. Given the government's superior credit rating

(AAA), why did the Navy agree to provide a rate of return that the market would have required for more risky investments?

Three elements appear to be responsible. First, the structure of the transaction was extremely complex. As identified in Chapter Three, the basic ship leveraged lease involves no fewer than seven major parties. The TAKX transaction was further complicated by the existence of four different shipowners which had contracted with the Navy to finance, build and operate eighteen ships. Those ships were to be sold to a disparate group of lessors, who had to obtain a substantial part of the purchase price from long-term lenders willing to back them on a non-recourse basis in the transaction. Once the lessors acquired the ships, they then leased them to a contractor under a bareboat charter agreement. The contractor, in turn, provided the Navy with ship "services" under a time charter. Only very large financial institutions possess the legal, tax, and financial knowledge and expertise to comprehend and execute such a complex transaction.

Second, to assure the tax benefits, the leases were structured so that a contractor stood between the Navy and the owners/lessors. This constituted a problem for potential equity participants. The Navy represented the source of funds upon which the owners/lessors (the equity participants) depended to service the long-term loans they

needed to acquire the ships. Since those loans were non-recourse to the owners/lessors, the interest rate they paid on those loans was determined in large part by the lending institutions' assessment of the Navy's (the charterer) ability to make charter payments. The full faith and credit of the Federal government theoretically stood behind the loans. Since the charter payments flowed through the contractor, the owners/lessors required complex guarantees that charter hire payments be protected from possible default by the contractor. The 11.745% rate of return was intended to partially compensate equity participants for those complexities.

Third, the size of the transaction required the Navy to offer an attractive rate of return. The size of the minimum equity investment was set at the cost of one ship or roughly \$162 million for a TAKX ship. In addition, the rate of return was to be earned over a twenty-five year period. Such terms are demanding in two respects. One, the initial investment is large and limits the potential investors to a few large institutions. Two, the length of the investment is inherently risky because it assumes the equity participant will have an income to shield during the early years of the lease term when the tax benefits are greatest and that the equity participant can achieve the desired rate of return over a relatively long 25-year period.

This third argument, however, is not altogether convincing in light of recent large scale debt offerings in the private sector. In 1980, IBM sold \$1 billion in debt at the Treasury bill rate. Thus, the large question looms, why was a private company able to negotiate better debt terms than the Federal government which enjoys the superior credit rating? The answer would appear to lay in the greater complexity of the TAKX transaction.

The treasurer of a prominent shipping company which had been asked to participate in the TAKX transaction remarked, when asked to assess the Navy's rate of return guarantee, that in view of the complexity and the size of the transaction, 11.745% was a reasonable rate of return to offer.

Some observers consider the TAKX transaction to be a risk free venture for the equity participants. As we have seen above, the government's guarantee of a steady flow of charter hire payments is only one part of the transaction considered by potential investors. Other major considerations include the size and complexity of the transaction, and the investor's perception of its ability to achieve the rate of return possible over the life of the investment. As one financial analyst answered when questioned about the TAKX's guaranteed rate of return, "in leveraged leasing, there is no such thing as a guaranteed rate of return."



#### 4. Other Tax Considerations

As discussed in Chapter V on financing private U.S. flag vessels, Congress provides certain tax subsidies to the Maritime industry for ships built or reconstructed in the United States. All of the studies which have examined the TAKX build and charter program to date have not examined the possible ramifications of existing federal maritime subsidies. Specifically, can the owners/lessors increase their leverage and implicit rates or return through any of the programs presently administered by the Maritime Administration?

A review of the various programs, reveals that the equity participants may be eligible for participation in the Capital Construction Fund (CCF) using a single vessel agreement. As was pointed out in Chapter V, the single vessel agreement generally applies to leveraged lease transactions and permits each equity participant to establish a CCF. The Maritime Administration must review the transaction to ensure it meets certain investment standards and then issue a ruling for each specific single vessel agreement. Approval of the equity participant's application should enable it to increase the size of the tax benefits it presently enjoys under the basic TAKX charter agreement. The Navy and the equity participants have recognized the potential impact of CCF participation have

agreed to negotiate the benefits emanating from any such CCF participation.

#### 5. Price of TAKX Ships

One of the justifications given for the TAKX build and charter program was the positive impact it would have on the deteriorating U.S. shipbuilding industry. Foreign competition has significantly eroded the U.S. shipbuilding base. In testimony before the House Committee on Ways and Means in February 1983, Deputy Assistant Secretary of the Navy Everett Fyatt noted that TAKX would alleviate the potential loss of \$97 million in existing notes and bonds guaranteed by the U.S. Maritime Administration under Title XI of the Merchant Marine Act. In addition, TAKX was estimated to create or preserve over 12,000 jobs in the U.S. shipbuilding industry, and help avert the closure of at least three shipyards.

Given the depressed state of the U.S. shipbuilding industry, did the Navy get the best available price for the TAKX ships? In response to that question, Military Sealift Command officials noted that the ships were contracted for through the standard competitive bid process prescribed for Department of Defense acquisitions. Was that the best price?

Whether the Navy, through MSC, could have negotiated a lower price for the TAKX ships is open to conjecture. Two points, however, are germane to such conjecture. One, what

level of profit, if any, was the Navy willing to provide the shipbuilders in view of existing market conditions? Two, to what extent should the Federal government take advantage of depressed industries? Clearly, the answers to both questions are a matter of national policy, not just Navy policy.

The question of whether a private sector shipping company could have negotiated a lower price is also open to conjecture. Certainly, the private sector would have had far less altruistic concerns over the state of the U.S. shipbuilding industry. Assuming their primary motive is profit, the private sector could be expected to take advantage of a "buyer's market" and drive the hardest bargain possible when negotiating with a depressed industry. Price, however, is also a function of volume and financing.

Clearly, no private firm could embark upon the construction of eighteen ships over a three year period. First, the ability of the present maritime shipping market to absorb the increased carrying capacity makes such expansion doubtful. Second, the cost of financing such a program is well beyond the means of most all private sector shipping companies. Even on a per ship basis, the cost would be higher because private shipping companies cannot obtain the lower financing rates available to the government.

For the purposes of pure conjecture, if a private company decided to undertake a program similar to TAKX using a leveraged lease, the costs would have certainly been higher. As noted in Chapter V, no private shipping company enjoys the same credit rating as the Federal government. As a result, the assignment of their charter hire payments as security for the non-recourse long-term debt would have fallen into a higher risk category. That higher risk category would have driven interest rates up and the charter hire would have risen commensurately.

The question of ship price, therefore, is difficult to assess. Pricing is a function of several considerations, some on a macro-economic level and others on a micro-economic level. To compare the purchase price of the TAKX ships with what may have been available to a private sector buyer is essentially impossible due to size considerations and the differing motivations between the private and public sectors.

#### 6. Residual Value

As discussed in Chapter Four, the value of the TAKX ships at the end of the 25-year lease term is a significant consideration in the lease-versus-buy cost analysis. The residual value is important for two reasons. First, the residual value represents a one-time cash inflow at the end of the lease term. The size of this one-time cash inflow is part of the formula for determining the amount of the

periodic lease payments required by the lessor to earn an acceptable rate of return on the investment.

Second, lease-versus-buy cost analysis requires the user be in the same economic position under either acquisition alternative at the completion of the lease term. Under the purchase alternative, when the user is finished using the asset, theoretically, it can be disposed of by the owner at a profit. That profit, discounted over the period the asset is used, represents a reduction in the real purchase price of the asset. Under the lease alternative, the user does not own the asset at the end of the lease term and does not benefit from any residual value which remains in the asset. To make the two alternatives similar for comparative purposes, the residual value must be deducted from the cost of the purchase alternative, or be added to the cost of the lease alternative.

Accurate prediction of an asset's residual value at some future date is extremely difficult. In the interests of conservatism, lessors often assume a residual value of zero which requires the lessor to recapture the cost of the investment through lease payments and associated tax benefits. The zero residual value assumption, however, may result in overly high, and therefore uncompetitive, lease terms. To eliminate the risk associated with incorrectly estimating the residual value, many lessors have turned to third parties to guarantee the residual value of the leased



asset. Such guarantees increase the cost of the asset to the lessor who, presumably, passes it on to the lessee in the form of higher periodic lease payments. [Ref. 12]

In the TAKX Requests for Proposals, the Navy did not require potential equity participants to make any minimum residual value assumptions. While IRS regulations require a 20 percent residual value assumption be made for lease classification purposes, no such requirement applies to potential lessors when determining their lease rental terms. By not stipulating a minimum residual value assumption, the Navy permitted potential equity participants to avoid any risk associated with incorrectly estimating the residual value. As noted above, such risk is an important consideration in private-sector leasing agreements.

Did the Navy benefit by not requiring a minimum residual value assumption? On the one hand, the Navy benefited from the lessor's lower cost of acquisition resulting from the lessor not having to insure the residual value of the TAKX ships. On the other hand, the Navy must pay higher periodic lease payments because of the zero residual value assumption. In addition, the lessor will receive the benefits of any residual value which may exist at the end of the lease term. In effect, the lessor could realize a higher rate of return on his investment than explicitly determined by the lease agreement, which

stipulated a rate of return based on a zero residual value assumption.

The answer to the question of whether the Navy benefited from not stipulating a minimum residual value assumption depends, in large part, upon whether a residual value will exist upon completion of the 25-year TAKX lease term. The size and likelihood of any residual value is dependent upon an assessment of the risks involved and is, therefore, open to conjecture. Should have, and could have the Navy negotiated additional lease terms which would have permitted the Navy to benefit from any residual value remaining in the asset are the more pertinent questions.

Present leasing laws prevent the lessee from obtaining the asset for a bargain purchase price. They do not, however, prevent a readjustment of lease payments which would reflect the existence of a residual value as it becomes more apparent over time that such a residual value will exist. Such a provision seems appropriate for a transaction like the TAKX leveraged lease where the government assumes all the risk associated with uncertain residual values.

#### C. SUMMARY OF ANALYSIS

The issues which have arisen from the TAKX transaction have been analyzed from two different perspectives. First, the issues of lease-versus-buy cost analysis were examined

and second, a private sector comparison was made with the TAKX transaction.

The review of Federal government lease showed that prior to TAKX, no specific guidelines existed for consistently assessing the costs of a lease and comparing those costs with a purchase alternative. The Office of Management and Budget and the Treasury Department have since provided specific guidelines for assessment of future long-term leases or charters contemplated by the Department of Defense. Those guidelines are very stringent and generally assign all of the indirect costs of leasing, as well as the direct costs, of leasing to the Federal agency contemplating the lease. Whether it is proper to assign the indirect costs of leasing to those agencies, however, is questionable.

One of the major issues, which has gone largely ignored, is the government's failure to provide a mechanism which can assess the costs and benefits of a lease-versus- don't buy decision. Present methodologies are structured to only assess the lease-versus-buy alternatives. Long-term leasing enjoys some significant advantages over the purchase alternative, such as spreading out the cash outlays of a program over the useful life of the asset. Present methods of lease analysis ignore some very important considerations which could cause the decision maker to make incorrect choices with respect to leasing.

The TAKX transaction compares favorably with practices in the private sector. On the issue of overly generous tax indemnities, we have seen that the Navy conformed to generally accepted leasing practice. On the issues of guaranteed rate of return and residual value, however, the Navy does not appear to have done as well as it might have. The provision of a guaranteed 11.745% rate of return (a BAA risk assessment) is defensible in view of the complexity and size of the TAKX transaction. On the other hand, firms in the private sector have issued extremely large debt issues and achieved terms which were similar to the then existing Treasury bill rates (or a AAA risk assessment). Once again, the complexity of the TAKX transaction with its numerous parties and legal complications certainly affected the rate of return which potential investors were willing to accept.

On the issue of minimum residual values, the Navy permitted potential equity participants to make zero residual value assumptions in their bids. The effect of permitting a zero residual value assumption, is to increase the amount of periodic lease payments. Since the terms of each of the TAKX contracts are proprietary information, it is impossible to determine the impact of allowing equity participants to make their proposals assuming zero residual value. Assuming, however, that the TAKX ships will retain some value at the end of 25 years, those contracts (if any) which included a zero value assumption will have cost the

government more than if some minimum residual value assumption had been made mandatory.

The results of this analysis have permitted us to look at many of the lessons learned from the TAKX transaction. The final chapter of this study will provide some of those lessons learned, drawn, not from participation, but from an analysis of the issues and the documents which have been a part of the TAKX transaction. The direct participants in TAKX (principally the Military Sealift Command and the Navy's TAKX lease advisor, Argent Group, Ltd.) certainly possess the most knowledge and expertise from which to formulate a more detailed and comprehensive set of guidelines for future long-term leases of Defense assets.



## VII. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The TAKX transaction forced the government to come to grips with two of the most important issues which surround government acquisitions through leases: (1) Selecting the correct lease-versus-buy cost analysis methodology, and (2) Setting bounds on the use of tax-benefits by government agencies to partially subsidize the acquisition of their assets.

The TAKX transaction, in particular, has drawn criticism from both inside and outside the Federal government. The primary focus of that criticism has centered on the Navy's analysis of leasing costs and its use of tax laws and tax indemnity guarantees to acquire the TAKX ships. Much of that criticism, however, has failed to recognize the single most important constraint faced by the Navy when it acted to acquire the TAKX ships: the Navy had already been refused the funds it needed to buy the ships.

The preceding chapters have examined the TAKX transaction from two broad perspectives. First, the issues and elements which determine the government's costs of leasing-versus-buying were examined. Second, the TAKX transaction was compared, in so far as possible, with private sector leasing practices. From that analysis, the relative merits and weaknesses of the TAKX transaction were exposed in an attempt to better understand the nature of

government and Department of Defense leasing. This chapter will synthesize lessons learned which can serve as guidelines for future lease transactions.

#### A. TAKX LESSONS LEARNED

##### 1. TAKX Transaction Structure

The TAKX transaction was carefully structured to take advantage of existing tax laws and IRS rulings to provide potential investors with significant tax benefits and, as a result, reduce the Navy's overall cost of acquisition. The TAKX ships were acquired through Time Charter agreements which contracted specifically for transportation services, and not the use of a ship. Such a distinction was important because the tax laws specifically denied certain tax benefits if the Navy were considered to have either acquired ownership of the TAKX ships, or acquired use of the TAKX ships and not just transportation services.

The TAKX Time Charter agreements provided for three principal parties to ensure the availability of the desired tax benefits. To separate the Navy and the owners/lessors, a third party, called the contractor, was made a party to the transaction. The contractor was initially charged with several responsibilities including:

- a. Arranging for the construction or conversion of the TAKX ships, including any interim financing requirements;
- b. Arranging long-term financing for potential equity participants;

- c. Finding equity participants to buy the ships and then bareboat chartering the ships back from the owners; and
- d. Operating the TAKX ships, including manning, navigating and maintaining the ships.

While sound in theory, the structure just described suffered several practical shortcomings. First, the contractors which the Navy selected were basically ship operators and were not skilled in the intricacies of high finance or contract negotiation. Second, the requirement for the contractors to arrange both interim and long-term financing created an artificial, but no less real, competition for funds. Instead of just one entity seeking construction and long-term debt funds for the TAKX ships, four companies were competing with each other for those funds. And third, the contractor's presence between the Navy and the owners/lessors required extremely complex and detailed contracts to provide the legal and monetary protection both parties needed against possible default by the contractor.

As the transaction proceeded from its initial stages, it appears the Navy quickly realized the contractor's limitations and interceded. The ability of the contractors to arrange construction financing was hampered by their generally poor credit ratings, a reluctance on the part of the financial community to accept the tenet that the government's full faith and credit stood behind the

contractor's obligations, and the artificial competition for funds just described. According to a Military Sealift Command source close to the TAKX transaction, the Navy quickly recognized these problems and interceded. Significantly it renegotiated the interim (construction) financing terms to achieve terms more representative of the government's superior credit. In some cases, already signed financing agreements were terminated. The Navy also assumed final responsibility for selecting equity and debt participants. While the contractor's financial agents were left in charge of soliciting participation proposals, the Navy reserved final determination for itself.

Finally, despite initial assumptions to the contrary, the use of a Time Charter arrangement through a contractor has not assured the tax benefits originally envisioned. While not ruling officially on the availability of any ITC with respect to the TAKX transaction, the IRS has let it be known that it considers the Navy to have acquired use and not just the services of the TAKX ships. As a result, the equity participants have not claimed the ITC and the Navy has agreed to indemnify them for the loss of that tax benefit. Thus, the existence of a contractor in any future Navy charter is of questionable utility. From a position of twenty-twenty hindsight, the inclusion of a contractor only served to make the TAKX transaction much more complicated and, as a result, probably more expensive

than it would have been had the contractor not been included.

## 2. Politics of Tax-Exempt Leasing

The controversy which surrounds the TAKX transaction did not originate with the Navy and TAKX. In fact, the TAKX leveraged lease transaction was not the first build and charter program undertaken by the Navy. As noted in earlier chapters, the Navy has regularly chartered vessels from the private sector since World War II. Long-term leasing by tax-exempt entities, however, gained much greater prominence when Congress enacted the Economic Recovery Tax Act of 1981 (ERTA). ERTA greatly liberalized the rules surrounding leasing and the transfer of tax benefits between the parties to a lease. Under the provisions of ERTA, several tax-exempt entities entered into sale-leaseback arrangements with private taxpaying entities to raise cash or finance acquisition of capital assets. Those transactions were subsidized, in part, by the tax-exempt parties selling the tax-benefits they were unable to use to private taxpaying parties which could use them. Large, taxpaying parties were able to shelter large amounts of income from taxes through such tax shelter programs. The net effect of such arrangements was to reduce the tax revenues collected by the Federal Treasury.

The Navy TAKX transaction brought Congressional concerns over these perceived abuses of the Federal tax



system to a head. The Joint Committee on Taxation's report on Federal leasing in 1983 generally voiced Congressional concern by stating,

"Behind the TAKX arrangement is a set of broader questions related to leasing by nontaxable entities such as Federal departments... [the] use of sophisticated, tax-motivated arrangements by tax-exempt entities creates perceptions that the tax system is unfair, especially if the Federal government itself engages in the practice." [Ref. 25: pp. 2-3]

The TAKX transaction was clearly singled out as an example of such abuse and came under the Congressional eye. The terms of the transaction and the cost-analysis methodologies used in support of TAKX were subjected to intense scrutiny.

While no specific guidelines existed concerning long-term leasing by the Defense Department, the Navy insured that the cognizant Congressional oversight committees on defense spending were appraised of the Navy's charter intentions from the outset. Unfortunately, approval by the oversight committees was insufficient to quell the ensuing controversy which arose over the TAKX transaction as its details became known to the public and Congress as a whole. Two elements of the transaction should have foreshadowed the controversy: one, the monetary size of the TAKX transaction, and two, the issue of Congressional control over Defense Department leasing.

In the first instance, large defense acquisitions have always stirred intense Congressional debate. The total size of the TAKX transaction was more than sufficient to

gain public attention once approved. The use of tax-benefit transfers, at a time when Congress was becoming increasingly alarmed about their cost to Federal coffers, was also guaranteed to attract public attention.

In the second instance, the abridgement of the normal Congressional oversight process permitted by the lack of specific leasing guidelines was certain to be noticed by Congressional Defense watchdogs. Programs of the size of the TAKX transaction are just too big to go unnoticed.

With the passage of the Deficit Reduction Act of 1984 (DRA), Congress has moved to prohibit government agencies from using tax-benefit transfers to subsidize their acquisition of capital assets. DRA generally denies any investment tax credit or accelerated depreciation deductions on assets owned by private parties and leased or chartered to the Federal government under a long-term agreement.

The primary lesson to be learned from the controversy which enveloped the TAKX transaction is to maintain a continuing sensitivity to Congressional moods concerning defense spending and budget deficits. The TAKX transaction crossed both lines by its sheer size and its use of Federal tax subsidies. The Navy must take care to present any similar future transactions in such a way that clearly shows the Navy's regard for Congressional concerns. Specifically, if Congressional guidelines do not exist for oversight procedures or cost-analysis methodologies,

specific guidance should be requested before acquisition decisions are made. As demonstrated by the TAKX controversy, Congress does not react well to a "fait accompli."

### 3. Impact on the Navy Industrial Fund

The impact of the TAKX transaction on the Navy Industrial Fund (NIF) will be significant. Chapter III noted the large negative unobligated balance the Military Sealift Command is forced to carry as a result of its long term charters. The TAKX transaction will exceed the NIF's ability to carry such charters and has forced the Navy to carry part of such obligations against the entire Operations and Maintenance appropriation. The net impact on overall Navy operations is difficult to assess. If the Navy is permitted to increase its Operations and Maintenance appropriation, the impact should be nil. If, however, Congress decides to make the Navy absorb the TAKX obligation, the Navy would have to absorb a loss of about one percent of its O&M funds to provide for TAKX. [Ref. 18: pp. 6-7 - 6-9]

The primary reason for the large negative impact on the NIF is that no special appropriation or contract authority exists to cover the advance contract obligations required by build and charter programs. The TAKX transaction requires the Navy to enter into 5-year charter agreements plus agree to severe agreement termination

penalties. The Navy uses the unobligated balance of customer orders provided to the Navy Industrial Fund to cover its charter obligations. TAKX has forced the Navy to use the Operations and Maintenance appropriation to cover its termination liabilities.

In an effort to limit the negative impact of charter obligations, the Navy's Comptroller has directed MSC to attempt to limit its charter periods to one-year periods so that large sums are not obligated in any one year. Future build and charter programs should be structured to permit one-year charter periods and thereby reduce the impact they have on the NIF and the Navy's Operations and Maintenance appropriation.

#### 4. Lease-Versus-Don't Buy

As noted from the outset, all of the major studies, which examined the TAKX transaction, have conducted their analyses using some form of a lease-versus-buy cost comparison methodology. Are the costs of leasing and buying the only determinants in a lease analysis? Chapter II pointed out that the decision to lease or buy was a secondary decision to be made after the acquisition decision. The importance of this sequence should not be lost on the Navy. Once the decision has been made to acquire an asset, the lease-versus-buy analysis is appropriate only as long as a purchase alternative is available. If the purchase alternative is not available,

then the appropriate analysis to conduct is a lease-versus-don't buy cost comparison.

In the case of the TAKX transaction, all of the major studies lost sight of the fact that Congress had refused to appropriate money for the TAKX ships. When the Navy decided to pursue the build and charter alternative, the appropriate cost comparison should have been between the leveraged lease and the cost of continuing the status quo for the period of the charter. Presumably, at some time in the future new ships would have to be built to replace aging ships or to meet emerging needs. What are the projected costs of not buying now, but at some future point when the need became so pervasive as to motivate Congress to appropriate the needed construction funds? Experience has shown that those replacement costs will be much higher than if acquired now.

Other elements of the leasing alternative are also ignored by the standard lease-versus-buy cost comparison methodologies. Chapter VI pointed out that lease financing was comparative to loan financing in only one respect: the same asset is acquired. The same financing, however, is not acquired. That basic difference has fundamental consequences for the Department of Defense. Presently, the services are required to pay for their assets up front. In other words, military systems are completely paid for within the first few years of their useful lives. As a result, the



initial cash outlays for those systems are very high and no cash outlays are incurred for their remaining service life. Leasing, on the other hand, spreads out the cost of services or the asset over the periods of use. Should the costs and benefits of such financing be ignored when comparing the lease with a purchase option?

The Navy must understand the basic difference between the lease-versus-buy or don't buy cost analyses and proceed accordingly. If the Navy permits lease analysis to be conducted using the wrong circumstance, i.e. buy instead of don't buy, it risks reaching the wrong conclusions concerning the desirability of an acquisition. Similarly, if the Navy permits watchdog agencies to use the wrong circumstance, it risks having its decisions being challenged on inappropriate comparative data. It is incumbent upon the Navy to ensure the appropriate circumstances and data are analyzed and compared when considering the lease alternative.

#### 5. Understanding the Market

In response to its request for equity participation in the TAKX transaction, the Navy received offers which totaled about 300 percent of that needed to fund the ships. Such a response indicates the desirability of TAKX as an investment. Chapter VI pointed out that the guaranteed rate of return was not considered to be exorbitant, nor were the other terms of the agreement out of line with what was found

in the private sector. Why, then, was there such apparent enthusiasm for participation in the TAKX transaction?

The major reason probably stems from the nature of the tax-shelter market in 1982 and 1983. During those years, the IRS was looking increasingly hard at various tax shelters which had enjoyed popularity during the previous years. Shelters which had once appeared secure, were collapsing under changing or tightening IRS regulations. The appearance of the TAKX transaction offered a tax-shelter that was not only competitive with available shelters, but appeared to have the blessing of the Federal government.

Given that backdrop, TAKX points out a critical aspect to be considered in similar transactions in the future. The government guarantee is a particularly powerful tool, especially during periods of uncertainty. While the terms of government contracts may appear competitive, the market is always changing. The TAKX terms can be adequately defended from a position which points to the size and complexity of the transaction, and the fact that the rate of return was competitively bid. But, given the remarkable response by investors to the TAKX transaction, one must speculate whether the government achieved the most advantageous terms.

## B. A FRAMEWORK FOR THE FUTURE

### 1. Effect of the Deficit Reduction Act of 1984

Chapter III noted that the Deficit Reduction Act of 1984 has essentially precluded future lease transactions similar to the TAKX leveraged lease. The thrust of DRA was to eliminate perceived abuses of the tax laws by tax-exempt entities, by greatly restricting the availability of certain tax-benefits which form the heart and soul of leveraged leasing. DRA does not, however, totally preclude the use of leases or charters to acquire naval assets on a short-term basis. Property leased for less than the greater of one year or 30 percent of the Treasury determined asset depreciation range (ADR) class life (but not longer than three years) is exempt from the DRA restrictions.

Certain "qualified technological equipment" such as computers, computer peripherals, hi-tech telephone equipment, and hi-tech medical equipment are exempt from DRA cost recovery restrictions if leased for terms of no longer than five years. Such leases are subject to other restrictions designed to maintain the integrity of DRA. True service leases are also exempted from DRA's provisions.

[Ref. 23]

Thus, while leveraged leasing of the TAKX sort has been effectively prohibited, the opportunity to use tax-oriented leases in the acquisition of certain assets, such as computer and communication equipment, remains

feasible. The lessons which the Navy learned from the TAKX transaction are applicable when considering such leases.

## 2. OMB/Treasury Lease Analysis Guidelines

Chapter IV presented the new OMB/Treasury lease analysis guidelines to be used by the Department of Defense when considering long-term leasing or chartering of aircraft or naval vessels. Those guidelines supplant the ambiguity over the treatment of certain elements in lease-versus-buy cost comparisons which existed prior to TAKX.

As noted in Chapter VI and above, however, the Navy must understand and make others aware that the results of such analysis may not be applicable to the problem at hand. That is, the lease-versus-buy cost comparison is applicable only when buying is an alternative. Under certain circumstances, like TAKX for instance, buying is not an alternative and the problem becomes a lease-versus-don't buy consideration. The Navy must be prepared to make such a distinction, conduct the appropriate cost comparisons, and effectively present that analysis to the appropriate oversight body.

## 3. Congressional Lease Oversight

Chapter III also reviewed recent defense authorization initiatives which have established greater congressional control over the long-term military leasing. The services are now required to appraise Congress of any intended lease or charter for aircraft or naval vessels

which have a term of greater than five years or more than one-half the useful life of the asset. Requests for such long-term leases will be subjected to the same review process as requests for purchases of major systems.

As a result, the financing terms of proposed leases and charters, as well as the asset's performance criteria, will be subjected to critical review. While proposals for acquisitions through outright purchase include sophisticated financial analysis, the scope of that analysis does not include many of the factors generally present in complex leasing agreements. To assure even and complete treatment of the numerous additional factors involved in the lease transaction, the Navy should develop a model which will provide oversight bodies with detailed estimates of the costs of lease financing. Such a model should also provide a sensitivity analysis of the various financial elements, such as discount rates, interest rates, and tax-benefit transfers, which influence the leasing decision.

#### 4. Extent of Government Involvement

One of the primary lessons learned from TAKX was the need for the government to be integrally involved in all aspects of a major leveraged lease or charter program. Such transactions are complicated by the complex legal requirements and, the myriad of tax laws and rulings which surround such leases. TAKX originally envisioned that the contractors would arrange the entire transaction in



accordance with guidelines and parameters established by the Navy. Chapter III noted that the contractors were generally expected to arrange for the financing and construction of the TAKX ships, and to find equity and debt participants to facilitate the charter of those ships to the Navy.

Unfortunately, the contractors selected by the Navy did not have the requisite knowledge or expertise to arrange such a complex transaction.

As Chapter VI noted, the Navy had to intervene to ensure that the Federal government's superior credit was fully appreciated by the financial market when setting the terms of the TAKX leveraged lease. In that regard, the TAKX transaction, as it finally evolved, provides an excellent blueprint for structuring the terms and agreements of similar transactions in the future.

#### C. RECOMMENDATIONS FOR FURTHER STUDY

##### 1. IMPACT OF SHIP CHARTERS AND LONG-TERM LEASES ON NAVY OPERATING AND MAINTENANCE APPROPRIATIONS

As Chapter III noted, the impact of long-term obligations resulting from ship chartering agreements poses a problem for Navy accounting. The Navy pays for the ships it charters using the Navy Industrial Fund (NIF). NIF is funded from the Navy's annual Operations and Maintenance (O&M) appropriation. Most of the Navy's ship charters, however, are multi-year contracts which obligate the Navy for a series of annual charter payments. In addition,

termination liabilities like those agreed to in the TAKX transaction, must be obligated for. Currently, there is no outlay authority to cover such future year obligations. O&M funds cannot be used since they are appropriated on an annual basis and cannot be used for future year commitments. The Navy has been forced to use a technical loophole that permits the Navy Industrial Fund to use the unobligated balance of receivables to offset future obligations resulting from multi-year commitments. Currently, no funding mechanism exists for the Navy to account for future obligations which result from multi-year lease or charter agreements.

2. Determination of an Appropriate Federal Government Discount Rate

Chapter IV highlighted the problems surrounding the selection of an appropriate discount rate for Federal government present value analysis. The Federal government has directed the Department of Defense to use the interest rate on new Treasury securities whose maturity most closely corresponds with the term of the proposed lease as the its discount rate. The private sector has been unable to adequately resolve the debate which surrounds the selection of a proper discount rate. Given the private sector's inability to come to a consensus of opinion about how to determine the correct discount rate, has the Federal government made a good decision in stipulating it's discount

rate? What are the problems associated with such a method of determination?

### 3. Spreading out the Cost of DOD Acquisitions

What are the advantages and disadvantages of using acquisition methods such as long-term leasing to spread out the cost of major assets over their economic lives? Present lease analysis guidance only addresses the costs of leasing as opposed to buying. What other considerations should be taken into account when the lease is compared with a don't buy alternative?

## APPENDIX A

### EXAMPLE OF THE CAPITAL CONSTRUCTION FUND TAX DEFERRAL MECHANISM

The Capital Construction Fund (CCF) is a tax-deferral program, not a tax-exemption program, which will ultimately allow the government to recoup the taxes deferred by a CCF participant. The following example is provided to show how the CCF participant defers taxes by making deposits into the CCF and then withdrawing those funds to purchase a new ship.

The CCF participant is permitted to make deposits into one of three separate accounts: the capital account, the capital gain account and the ordinary income account. The money deposited into these accounts can come from a number of sources including: (a) taxable income attributable to the operation of CCF agreement vessels, (b) amounts representing depreciation allowed on agreement vessels, (c) interest or dividends earned from investment of amounts held in the fund, and (d) net proceeds from the disposition of agreement vessels. The amount and timing of deposits into the CCF and the subsequent withdrawal of those funds are subject to various rules stipulated by the Maritime Administration and the CCF agreement.

When qualified withdrawals are made from the CCF, they are first charged against the capital account, next against the capital gain account, and last against the ordinary

income account. These withdrawals reduce the depreciable basis of the new vessel for Federal income tax purposes.

#### A. FINANCIAL DATA

For the purposes of this example assume ACME Shipping, Inc. has entered into a CCF agreement with the intention of purchasing a ship three years later. Subject to that agreement, ACME has entered three presently operating vessels as agreement vessels. The following additional data is also provided:

1. Net Income. ACME expects to realize the following net income from the agreement vessels, and to deposit these amounts into the Ordinary Income Account of the CCF:

1981	\$2.0 million
1982	\$2.5 million
1983	\$2.5 million

2. Capital Gain. On 1 January 1981, the agreement vessel SS Harvard was sold for \$5 million. \$3.5 million of that amount represented a return of capital and was deposited into the CCF's Capital Account. The remaining \$1.5 million represented a capital gain and was deposited into the Capital Gain Account of the CCF.

3. Depreciation. ACME depreciated its two remaining vessels on a straightline basis, assuming a 20-year life and no salvage value. Its annual allowable depreciation deduction totaled \$4 million.



4. Interest. ACME is able to invest its CCF funds in qualified securities at an average interest rate of eight percent per year.

5. Tax Year. The calendar year is ACME's tax year.

6. New Ship Purchase. On 5 January 1984, ACME acquires the new ship SS Stanford at a cost of \$50 million. ACME withdraws all of its funds from the CCF to meet part of that purchase price. ACME intends to depreciate the new ship using straightline depreciation over a 20-year period and assumes there will be no salvage value.

#### B. THE CCF ACCOUNT BALANCE

During the course of the three years (1981 through 1983), the following amounts will be accumulated in the three CCF accounts:

<u>1981</u>	Capital Acct	
	Disposition	\$ 3,500,000
	Depreciation	4,000,000
	Capital Gain Acct	1,500,000
	Ordinary Income Acct	2,000,000
	Total 1981	<hr/> \$11,000,000
<u>1982</u>	Capital Acct:	
	Previous Amount	\$ 7,500,000
	Interest Earned	600,000
	Depreciation for 1982	4,000,000
	Capital Gain Acct:	
	Previous Amount	1,500,000
	Interest Earned	120,000
	Ordinary Income Acct:	
	Previous Amount	2,000,000
	Interest Earned	160,000
	Net Income for 1982	2,500,000
	Total 1982	<hr/> \$18,380,000

<u>1983</u>	Capital Acct:	
	Previous Amount	\$12,100,000
	Interest Earned	968,000
	Depreciation for 1983	4,000,000
	Capital Gain Acct:	
	Previous Amount	1,620,000
	Interest Earned	129,600
	Ordinary Income Acct:	
	Previous Amount	4,660,000
	Interest Earned	372,800
	Net Income for 1983	<u>2,500,000</u>
	Total 1983	\$26,350,000

The totals in the three CCF accounts at the end of 1983 can be summarized as follows:

Capital Acct	\$15,500,000 (Note 1)
Capital Gain Acct	1,749,600
Ordinary Income Acct	<u>9,100,400 (Note 1)</u>
Total	\$26,350,000

Note 1: The interest earned on the funds deposited in the Capital Account are transferred into the Ordinary Income Account where they also accumulate interest. The figures above reflect those transfers.

#### C. BENEFITS OF THE CCF

During the years 1981 through 1983, ACME is able to defer the payment of taxes on the income it realized from the operation of the agreement ships by placing it into the CCF. Assuming that ACME is in the 46 percent corporate tax bracket, it deferred the following amounts: 1981 - \$920,000, 1982 - \$1,150,000, and 1983 - \$1,150,000. In addition, ACME deferred capital gains taxes on the disposition of one of the agreement ships. Assuming a capital gains tax of 40 percent, it deferred an additional \$600,000.

Once again, these amounts represent tax deferrals and not tax exemptions. These amounts are recovered during later periods by reducing the depreciable basis of the new ship which is acquired using the CCF funds.

#### D. RECOUPING THE TAX DEFERRAL

As noted above, the Capital Construction Fund enables the participant to defer, not escape, its tax liability. The government recoups the taxes deferred as the result of deposits into the CCF by reducing the depreciable basis of the new vessel acquired using CCF funds. The new vessel's depreciable basis is reduced in the following manner:

1. Withdrawals from the Capital Account do not reduce the depreciable basis of the vessel since there are no taxes deferred on deposits credited to this account.
2. Withdrawals from the Capital Gain Account reduce the depreciable basis of the vessel by five-eighths of the amount withdrawn from that account if the CCF participant is a corporation. If the CCF participant is an individual or a partnership, the reduction is one-half of the amount withdrawn from the Capital Gain Account.
3. Withdrawals from the Ordinary Income Account reduce the depreciable basis by an amount equal to that withdrawn from that account. In other words, the basis is reduced on a dollar for dollar basis.

In our example, the depreciable basis of the new ship SS Stanford would be determined as follows:

Cost of SS Stanford	\$50,000,000
Basis Reductions:	
Capital Acct	-0-
Capital Gain Acct (Note 1)	
(5/8 x \$1,749,600)	( 1,093,500)
Ordinary Income Acct	( 9,100,400)
Adjusted Depreciable Basis	<u>\$39,806,100</u>

Since ACME intends to depreciate its new ships over twenty years using straightline depreciation and assumes no salvage value, the annual allowable depreciation is:

$$\$39,806,475 \div 20 = \$1,990,324$$

The annual depreciation would have been \$2,500,000 if ACME had not used the Capital Construction Fund. As a result, ACME's taxable income will be \$509,676 greater each of the 20 years that the new ship is depreciated.

$$\$2,500,000 - \$1,990,324 = \$509,676$$

This greater tax liability over the 20-year life of the ship permits the government to recoup the taxes it deferred on the deposits ACME originally made into the CCF.

## APPENDIX B

### CAPITAL CONSTRUCTION FUND SINGLE-VESSEL AGREEMENT COMPUTATION

The following computation is provided to give a general understanding of how the single vessel CCF agreement can benefit a ship leveraged lease equity participant.

The single-vessel agreement permits the equity participant to establish a CCF using the new ship as both the eligible vessel (that vessel which generates the money eligible for deposit into the CCF) and as the qualified vessel (that vessel for which the CCF monies are used).

Simplifying assumptions have been made, and the reader is cautioned to remember that each single vessel agreement is subject to scrutiny by the Maritime Administration to insure that the intent and integrity of the Capital Construction Fund is maintained.

#### A. GENERAL AGREEMENT INFORMATION

Assume the following information pertaining to a single vessel that qualifies under the single-agreement provisions of the Capital Construction Fund:

- |                             |                      |
|-----------------------------|----------------------|
| 1. Vessel Purchase Price:   | \$200 million        |
| 2. Equity Participation:    | 40% or \$80 million  |
| 3. Debt Participation:      | 60% or \$120 million |
| 4. Interest on Debt:        | 12% annually         |
| 5. Term of Debt Instrument: | 20 years             |
| 6. Interest on CCF Funds:   | 8%                   |



## B. ANNUAL DEBT PAYMENTS

The equity participant must service his \$120 million debt obligation over a 20 year period while incurring a 12% interest charge on the outstanding principle. Assume that debt payments of principal and interest are made at the beginning of each year. The amount of each one of those 20 annual payments is:

$$\$120,000,000 - 8.36578 = \$14,344,150$$

Where \$120,000,000 is the amount borrowed by the equity participant and 8.36578 is the present value factor of an annuity due of \$1 for 20 periods at 12% annual interest.

## C. DEPRECIATION METHODS AVAILABLE

### 1. Accelerated Cost Recovery System (ACRS) Method

If the equity participant is permitted to depreciate the single-vessel agreement ship using ACRS, the depreciation schedule for the \$200 million ship would be:

<u>YEAR</u>	<u>DEPR. RATE</u>	<u>AMOUNT</u>
1	15%	\$30 million
2	22%	44 million
3	21%	42 million
4	21%	42 million
5	21%	42 million

### 2. Straight-Line Depreciation Method

If the equity participant is required to depreciate the single-vessel agreement ship using a straight-line depreciation method, the annual depreciation would be:

$$\$200 \text{ million} \div 20 \text{ years} = \$10 \text{ million/year}$$

#### D. DEPOSITS REQUIRED FOR SINGLE-VESSEL CCF

##### 1. Accelerated Depreciation Deposits

If the single-vessel CCF participant is permitted to deposit amounts equal to the Accelerated Cost Recovery System (ACRS) depreciation rate into the Capital Account, then the equity participant would need only four years to establish an account balance sufficient to service the remaining sixteen annual debt payments. See the computations below:

##### a. CCF Account Balance Required to Retire Debt.

The balance required to retire the remaining debt outstanding, without having to make further deposits, can be accumulated in four years. This assumes deposits are made at the end of each year, and that those deposits will earn 8% interest annually. The balance required to make 16 payments of \$14,344,150 beginning at the beginning of the 5th year is computed as follows:

$$\$14,344,150 \times 9.55948 = \$137,122,615$$

Where 9.55948 is the present value factor for an annuity due of \$1 at 8% annual interest for 16 years.

b. Deposits Needed to Attain Required Balance. The single-vessel agreement CCF participant can deposit any amount up to the allowed depreciation for the applicable year into the CCF account. As shown in (a) above, the fundholder needs to build a balance of \$137,122,615 in four years to establish an amount which can then service the

remaining sixteen years of the debt obligation without having to make any further deposits. Assuming the equity participant desires to make the maximum deposit permitted under the ACRS depreciation method, the following annual deposits would be required:

<u>YEAR</u>	<u>DEPOSIT</u>	<u>INTEREST</u>	<u>END OF YEAR BALANCE</u>
1	\$30,000	\$ -0-	\$ 30,000
2	44,000	2,400	76,400
3	42,000	6,112	124,512
4	42,000	9,961	137,123
	2,515		
(Amounts shown in \$ 000)			

## 2. Straightline Depreciation Deposits

If the single vessel agreement fundholder is only allowed to use straightline depreciation to determine the amounts deposited in the Capital Account, it will take the equity participant much longer to establish a balance which can liquidate the remaining debt service payments. Using straight-line depreciation, it will take the equity participant nine years to establish an account balance capable of meeting the remaining annual debt payments. See below:

### a. CCF Account Balance Required to Retire Debt.

The balance required to retire the remaining eleven years of debt, beginning with payments in the 10th year would be:

$$\$14,344,150 \times 7.71008 = \$110,595,000$$

Where 7.71008 is the present value factor for an annuity due of \$1 at 8% interest for 11 years.

b. Deposits Needed to Acquire Required Balance.

Assuming the equity participant would make the maximum deposits permitted under the straight-line depreciation method, the following annual deposits would be needed:

1st 8 Years: \$10 million each year which will accumulate a balance of

$$\$10,000,000 \times 10.63663 = 106,366,300$$

9th Year: A final deposit of \$4,228,700

E. CONCLUSION

As shown above, if the equity participant is permitted to use the accelerated depreciation method and has the resources to do so, a self-liquidating balance can be quickly established to service the outstanding debt incurred to buy the single-vessel agreement ship.

## LIST OF REFERENCES

1. Block, M. K., Who Should Own the Fleet, an unpublished report written for the CNO, 1974.
2. Johnson, R. W. and Lewellen, W. G., "Analysis of the Lease-or-Buy Decision," The Journal of Finance, v. XXVII, no. 4 pp. 815-823, September 1972.
3. Vancil, R. F., Leasing of Industrial Equipment, McGraw-Hill, pp. 6-7, 1963.
4. Stephens, W. L., "The Lease or Buy Decision: Make the Right Choice," Financial Executive, v. LI, no. 5, pp. 41-49, May 1983.
5. BankAmeriLease Group Report, On the Spot Leveraged Leasing, 1979.
6. Kieso, D. E., and Weygandt, J. J., Intermediate Accounting, John Wiley & Sons, pp. 979-986, 1983.
7. The Financial Accounting Standards Board of the American Institute of Certified Public Accountants, FASB Statement No. 13 Accounting for Leases, pp.10-11, 1980.
8. Internal Revenue Service, Revenue Ruling 55-540, 1955-2 Cum. Bull 39.
9. Internal Revenue Service, Revenue Procedure 75-21.
10. Nevitt, P. K., Project Financing, Euromoney Publications, pp. 55-96, 1983.
11. Capettini, R. and Toole, H., "Designing Leveraged Leases: A Mixed Integer Linear Programming Approach," Financial Management, v. X, no. 4, pp. 15-23, Autumn 1981.
12. Dyl, E. A. and Martin, Jr., S. A., "Setting Terms for Leveraged Leases," Financial Management, v. VI, no. 4, pp. 20-27, Winter 1977.
13. Everett, J. O. and Porter, G. A., "Safe-Harbor Leasing--Unraveling the Tax Implications," Journal of Accounting, Auditing & Finance, v. 7, no. 3, pp. 241-255, Spring 1984.



14. Granhof, M. H., "Tax Exempt Leasing: A Framework for Analysis," Public Administration Review, v. 44, no. 3, pp. 232-240, May/June 1984.
15. General Accounting Office Report, GAO/PLRD-83-84, Improved Analysis Needed to Evaluate DOD's Proposed Long-term Leases of Capital Equipment, 28 June 1983.
16. Nevitt, P. K., "Ship Financing and Leasing," Ship Financing, Transcript of the Federal Ship Financing Seminar, 1980, pp. 28-33, May-June 1980.
17. Poole, G. L., Powell, B. B., and Gray, D. T., "Financing of United States-Flag Vessels," Tulane Law Review, V. 56, No. 4, pp. 1172-1284, June 1982.
18. Institute for Defense Analysis, Program Analysis Division, IDA Paper P-1665, Lease Versus Purchase of Naval Auxiliary Ships, Wells, J. D., and Munyon, P. G., February 1983.
19. Military Sealift Command Contract No. N003382-C-1006, TAKX Maritime Prepositioning Ship Agreement to Charter, Expander Transport Corporation (Ship No. 1: Estelle Maersk), August 17, 1982.
20. Military Sealift Command, Revised Summary of Principal Terms, ltr, March 13, 1984.
21. Blondin, P. W., Practical Comptrollership, Naval Postgraduate School, pp. H-1 - H-11, July 1983.
22. Phone Conversation with Navy Industrial Fund Offices, 22 October 1984.
23. Peat, Marwick, Mitchell & Co., Deficit Reduction Act of 1984 - Tax Provisions, pp. 27-29, 1984.
24. United States Code, Chapter 141 of Title 10, Section 2401.
25. Joint Committee on Taxation Report JCS 3-83, Tax Aspects of the TAKX Maritime Prepositioning Ship Program, 25 February, 1983.
26. Argent Group Ltd. Report, Analysis of the Report by the Staff of the Joint Committee on Taxation Regarding Tax Aspects of the TAKX Maritime Prepositioning Ship Program and Other Concerns expressed at a hearing before the Subcommittee On Oversight of the Committee On Ways and Means, 25 March 1983.

27. Andresky, Jill, "Damn the Congress, Full Speed Ahead," Forbes, v. 131, no. 13, pp. 30-31, 20 June 1983.
28. Argent Group Ltd. Report TAKX Maritime Prepositioning Ships Relative Financing Costs of Charter and Purchase, pp. 4-5, July 1982.
29. Reilly, R. F., "A Cost of Funds Employed Method in Lease vs. Buy Analysis," Financial Executive, v. XLVIII, no. 10, pp. 14-17, October 1980.
30. Office of the Secretary of Defense, Program Analysis and Evaluation Division, Comparison of Methods for Valuating the Cost of a Lease, unpublished report.
31. Office of Management and Budget, Joint OMB and Treasury Guidelines to the Department of Defense Covering Lease or Charter Arrangements for Aircraft or Naval Vessels, Washington, D.C., October 31, 1984.
32. Frankel, E. G., Regulation and Policies of American Shipping, Auburn House Publishing, pp. 41-46, 1982.
33. Cheng, P. C., Financial Management in the Shipping Industry, Cornell Maritime Press, 1979.
34. U.S. Maritime Administration, Construction-Differential Subsidy, July 1975.
35. Chaffee III, D.B.H., "Title XI Financing - The Role of the Investment Banker," Ship Financing, Transcript of the Federal Ship Financing Seminar, pp. 18-24, May 1980.
36. U.S. Maritime Administration, The Capital Construction Fund Program, 1981.
37. Uttridge, E. A., "The Capital Construction Fund Program," Ship Financing, Transcript of the Federal Ship Financing Seminar, 1980, pp. 34-38, May 1980.
38. U.S. Maritime Administration, CCF Benefits Model, an unpublished abstract.
39. Bernstein, A., "Lease-a-Jail," Forbes, v. 132, no. 6, p. 118, September 12, 1983.
40. Venkataraman, V. K., and Stevens, R. G., "Capital Budgeting in the Federal Government," The Government Accountant's Journal, v. XXX, no. 4, pp. 45-50, Winter 1981-1982.

41. Honig, L. E., and Coley, S. C., "An After-Tax Equivalent Payment Approach to Conventional Lease Analysis," Financial Management, v. IV, no. 4, pp. 28-35, Winter 1975.
42. Bureau of National Affairs, Inc., "DOD Aiming for Cost Effective Contract Requirements," Federal Contracts Report, v. 41, no. 14, p.588, April, 2, 1984.
43. Schmitt, M. K., and Crump, H. E., Leveraged Leasing in the Federal Sector, M.S. Thesis, Naval Postgraduate School, Monterey, California, December 1983.

# INITIAL DISTRIBUTION LIST

	No. Copies
1. Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	2
2. Defense Logistics Studies Information Center U.S. Army Logistics Management Center Fort Lee, Virginia 23801	2
3. Library, Code 0142 Naval Postgraduate School Monterey, California 93943	2
4. RADM Sansone, USN Contracts and Business Management MAT02, Washington, D.C.	1
5. Professor Joseph G. San Miguel, Code 54ZF Department of Administrative Sciences Naval Postgraduate School Monterey, California 93943	2
6. CDR Dean C. Guyer, USN, Code 54GU Department of Administrative Sciences Naval Postgraduate School Monterey, California 93943	2
7. LCDR Ronald E. Ratcliff, USN Commander, Carrier Group Two FPD New York, New York 09501	2











DUDLEY KNOX LIBRARY  
NAVAL POSTGRADUATE SCHOOL  
MONTEREY CA 93943-5101



GAYLORD S





thesR242

An analysis of U.S. Navy leveraged leasi



3 2768 000 61200 6

DUDLEY KNOX LIBRARY *c.1*